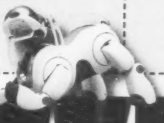
FUTURE WATCH Can computer science become an appealing career choice again? **Robot dogs** and a TV show would help. **PAGE 26**



KEEP IT CLEAN
GM's Eric Litt says ethical security researchers need rewards — or they might go bad. **PAGE 10**

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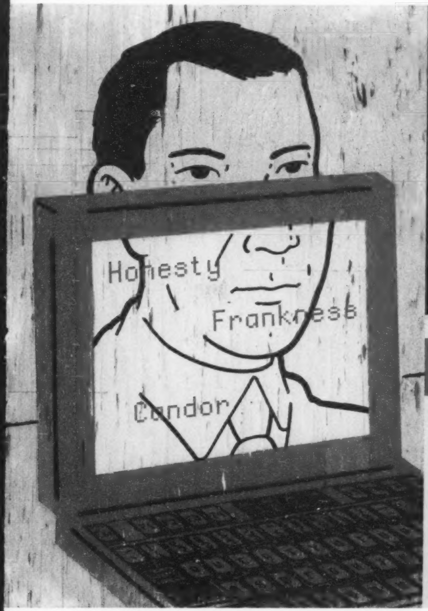


SAVING FACE IN CHINA

PAGE 37 If your company has an office or supplier in China, you know that cultural differences can cause communication problems. Fortunately, automated systems can help you get straight answers.

ILLUSTRATION BY DAN PAGE

Health IT Czar's Abdication Won't Slow E-records Push

Brailer kick-started program, but his successor must show results, users say

BY HEATHER HAVENSTEIN

Users from the health care community last week said the resignation of the point man for federal health IT efforts shouldn't blunt ongoing moves to adopt electronic medical records nationally.

But they stressed that whoever replaces David Brailer, who resigned as national coordinator for health information technology late last month, must quickly show measurable progress in the e-health arena. The next coordinator must also foster closer collaboration between the government and doctors, users said.

President Bush appointed Brailer in May 2004 to help lead a national effort to replace paper-based health records with electronic medical records. Health care IT execs said Brailer was a high-profile advocate of EMRs and of creating the standards and infrastructure needed to exchange them.

John Wade, CIO at Saint Luke's Health System Inc. in Kansas City, Mo., said Brailer's

Health Czar, page 16

NEWSPAPER

CA, Sun Still Looking For Answers

Kumar admits to accounting fraud; CA warns of poor financial results

BY KEN MINGIS AND MATT HAMBLEN

Sanjay Kumar, the former chairman and CEO of what is now CA Inc., pleaded guilty to securities fraud, conspiracy and other charges last week, closing the book on a key chapter in an accounting scandal that the software vendor is still trying to put behind it.

But the challenges CA faces as it tries to transform its operations and fully repair its relationships with customers were highlighted by a warning that the company will report lower-than-expected financial results for the quarter that ended March 31. Although CA put

CA, page 16

> **"CA will survive, but it's definitely a black eye.**
>
> **STEVE RUMMEL,**
> VICE PRESIDENT OF DATA SERVICES, MAHER TERMINALS

Users applaud choice of Schwartz as Sun's CEO but want more changes

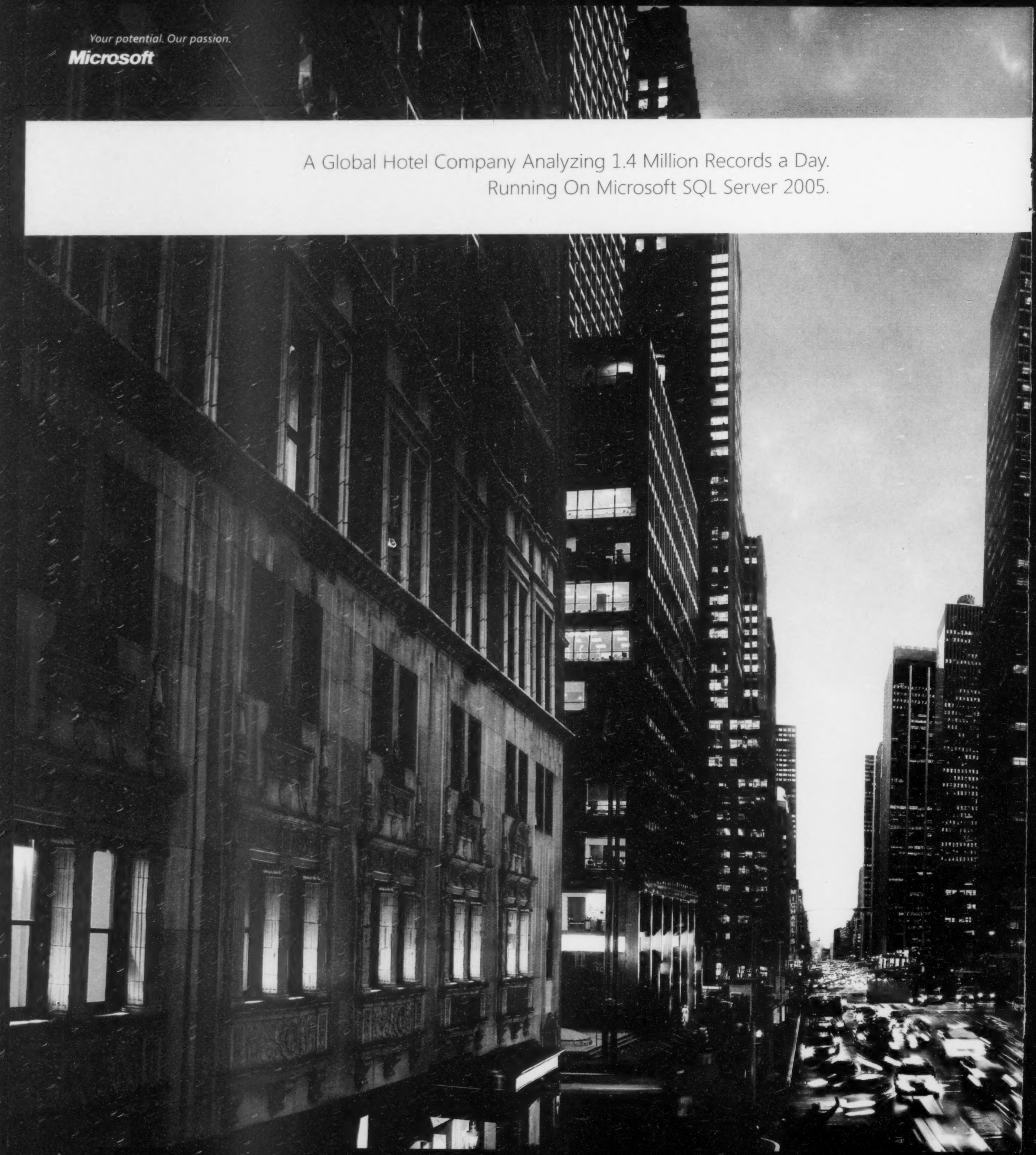
BY PATRICK THIBODEAU

Wall Street investors aren't the only group looking for some tangible improvements from new Sun Microsystems Inc. CEO Jonathan Schwartz, who took over for Sun co-founder Scott McNealy last week. Users also ticked off a list of changes they want Sun to make, although they largely viewed Schwartz's appointment as a sign of management continuity at the company.

SCHWARTZ says he will do some "pruning" of Sun's operations.

Sam Thomas, information systems supervisor for the city of Oakland, Calif., said Sun needs to make its sales organization easier for customers like him to work with. The city uses a range of Sun systems and storage equipment, but Thomas

Sun, page 49



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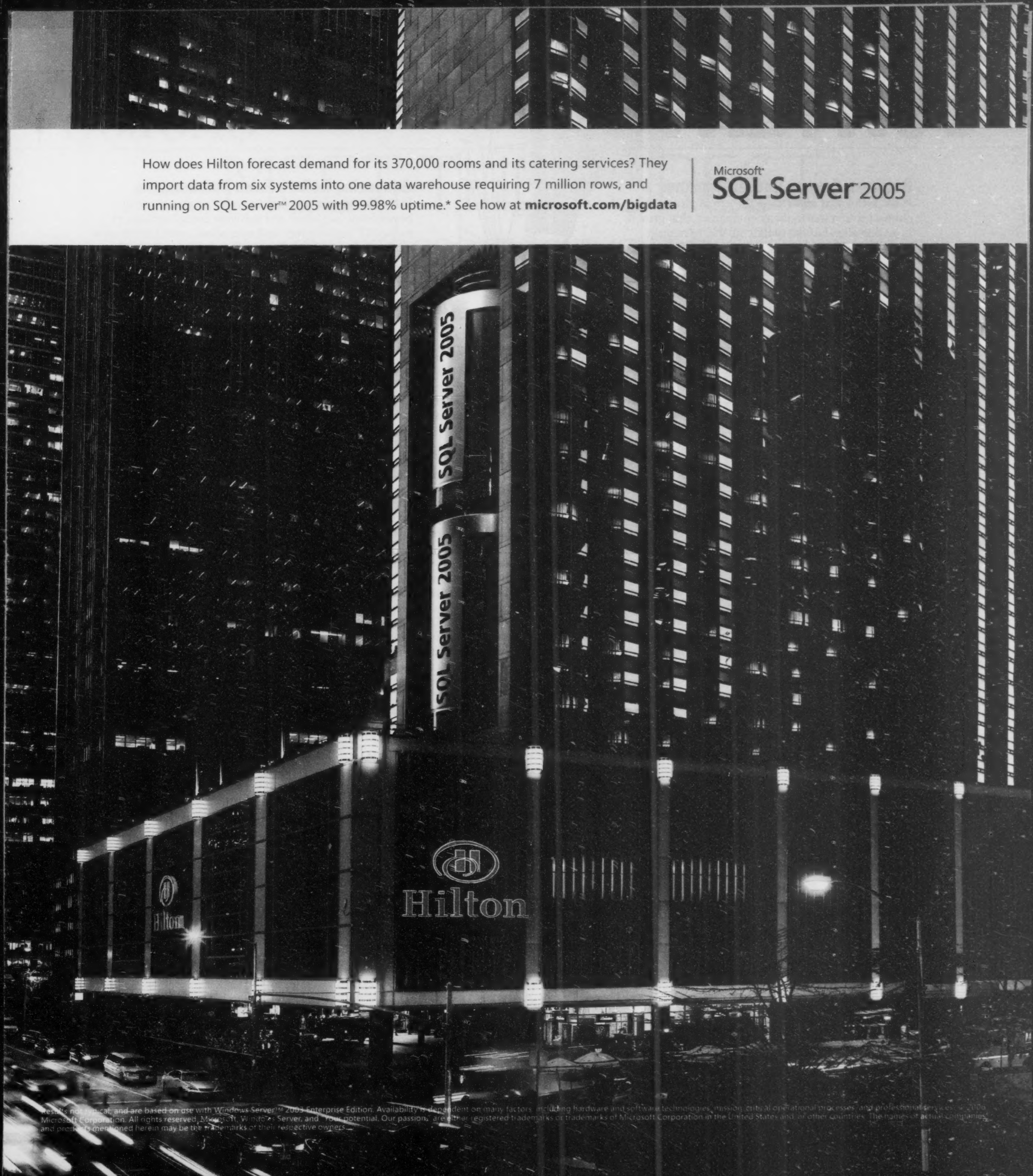

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Squeezing Dollars From Maintenance

In the Management section: Savvy IT execs are going beyond rote hardware and software consolidations to reduce IT maintenance and operations costs and liberate additional capital for discretionary projects. **Page 40**

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6 **IBM adds** a low-cost mainframe for midsize companies, markets such as China and — maybe — users of its i5 midrange line.

7 **Large companies** are starting, after years of talk, to roll business intelligence capabilities out to large numbers of users and to customers and suppliers.

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The Realities of Risk

SECURITY: *Spies Among Us* author Ira Winkler joins the *Computerworld.com* stable of columnists. This week: Do you really understand how to manage risk? **www.computerworld.com/security**

Installing a Linux Sniffer

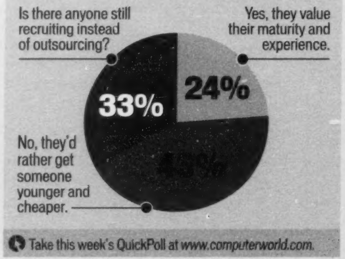
NETWORKING: In Part 2 of his tutorial, networking pro Greg Schaffer explains how to install a sniffer package on your dirt-cheap Linux network analyzer. **www.computerworld.com/networking**

Never Be Lost Again

MOBILE/WIRELESS: Columnist Craig J. Mathias examines WLAN location and tracking systems and how they compare with the more popular GPS. **www.computerworld.com/mobile**

QuickPoll Results

Do IT managers want to recruit baby boomers seeking a career change?



Take this week's QuickPoll at *www.computerworld.com.*

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AT DEADLINE

Intel Plans to Cut Costs, Workers

Intel Corp. expects a 3% drop in revenue for 2006 and is planning a reorganization that could include layoffs over the next 90 days. Intel is projecting that profits will drop from $12.1 billion in 2005 to $9.3 billion in 2006. The projection comes after disappointing first-quarter results.

INTEL BY THE NUMBERS

	REVENUE	[illegible]
Q1 '06	$8.9B	$1.3B
Q1 '05	$9.4B	$2.2B

EC, Microsoft Battle In Antitrust Appeal

Microsoft Corp. violated antitrust law to "double-lock" a virtual monopoly it holds on PC operating systems, a European Commission lawyer argued during a weeklong court session to debate Microsoft's challenge to the EC's antitrust ruling. A Microsoft lawyer countered that the sanctions the EC imposed in its 2004 antitrust decision would imperil the software company's intellectual property.

CA Unveils Free Database Tool Set

CA Inc. this fall will ship a Unicenter Database Command Center tool designed to help administrators simplify the management of multiple databases running on different platforms. The browser-based tool provides an integrated user interface for the IBM DB2, Oracle and Ingres databases.

Microsoft Profits Miss Expectations

New-product sales helped Microsoft's third-quarter revenue grow by 13% over the year-earlier period, though profits slightly missed analyst estimates. The company said sales of new products such as SQL Server 2005 and Microsoft Dynamics enterprise applications were strong.

MICROSOFT BY THE NUMBERS

	REVENUE	[illegible]
Q3 '06	$10.9B	$3B
Q3 '05	$9.6B	$2.6B

Networking Vendors Take Upgrade Route at Interop

Product announcements focus on performance, security improvements

BY MATT HAMBLEN

AT INTEROP Las Vegas 2006 today, Cisco Systems Inc. will announce three add-on products that it said could triple the performance of its popular 7200 Series routers.

Cisco's announcement is one of dozens being made at Interop by networking vendors, many of which plan to boost the performance or security of existing technologies. For example, Citrix Systems Inc. intends to unveil the NetScaler 12000, a high-end addition to its line of application acceleration appliances.

The products that Cisco is adding include a processing engine called the NPE-G2, which doubles the 7200's routing performance to 2 million packets per second, said Stefan Dyckerhoff, the company's director of midrange routing.

Cisco also intends to announce a virtual private network services adapter and a device that lets users add a seventh port adapter to their routers. Dyckerhoff said the VPN adapter, together with the NPE-G2 engine, could triple the throughput of the 7200s, which are widely used as WAN aggregation routers.

Wachovia Corp. will install the NPE-G2 on 120 existing 7200s when the new processor becomes available this month, said John Burns, vice president of network services at the Charlotte, N.C.-based financial services firm. Because he can use the 7200 chassis he already has in place, Burns said he expects to save "at least several million dollars over moving to a new platform."

Burns beta-tested the NPE-G2 from December to March and found that it can support a mix of voice-over-IP and data traffic with full quality-of-service capabilities — something that the 7200's current processing engine can't handle. He said he will also use the new engine's added capacity to support data encryption on Wachovia's networks.

Joel Conover, an analyst at Current Analysis Inc. in Sterling, Va., said Cisco almost completely dominates the market for aggregation routing, with a market share of about 90%. But without the performance improvements being made to the 7200 line this week, "Cisco would have been inviting competitors to come in and offer an alternative," Conover said.

He added that similar improvements are needed on Cisco's line of integrated services routers, an even more popular offering that provides data, voice and security services.

Wes Wasson, vice president of worldwide marketing at Fort Lauderdale, Fla.-based Citrix, said the NetScaler 12000 will support 275,000 application transactions per second, up from 230,000 in the company's current NetScaler 10000 model. The 12000 will sell for $95,000, complete with software, Wasson said.

Major League Baseball plans to test and probably deploy the NetScaler 12000 on its MLB.com Web site at the end of the current baseball season, said Justin Shaffer, vice president and chief architect for the site.

Shaffer currently uses eight NetScaler 9950s in two data centers in New York and Chicago to improve performance on the Web site. He said the 12000 could reduce the number of required machines, freeing up data center space while adding more capacity. ▸

Router Upgrade

Cisco is announcing the following add-ons for its 7200 Series routers:

- **NPE-G2 processing engine**, which fits in existing 7200 chassis and doubles routing performance. Priced at $19,000; available this month.
- **VPN service adapter** for accelerating the transmission of VPN data via the IPsec protocol. Priced at $15,000; available in this year's second half.
- **Port adapter jacket card** for increasing the number of port adapters on a 7200 from six to seven. Priced at $1,250; available now.

IBM Unveils Mainframes Starting at $100,000

BY PATRICK THIBODEAU

IBM never talks publicly about the price of its high-end mainframes, which can cost millions of dollars. But when it announced a new low-end model last week, the system's $100,000 starting price was a featured attraction.

IBM hopes that price will draw new users to the mainframe, especially in developing countries such as China, where the announcement was made. But there's another group of customers that also may consider switching its allegiances: users of IBM's System i5 midrange line.

Gregory Martin, IT manager for integration and technical architecture at Royal Caribbean Cruises Ltd. in Miami, is an i5 user. He said the big reason why Royal Caribbean didn't consider buying a mainframe previously was the cost of the technology.

But the new, lower-cost offering, called the System z9 Business Class, "is something that we would definitely want to take a look at," Martin said. "It may eat into, to some degree, that [i5] world." One of the things he likes about the idea of using a mainframe, he added, is its ability to support multiple databases, such as Oracle installations. The i5 supports only IBM's DB2.

IBM has been offering a $200,000 mainframe called the z890 for two years. But unlike that system, the new model is based on the same technology as the company's high-end machines, which are being renamed the System z9 Enterprise Class.

The Business Class and Enterprise Class systems share many of the same characteristics, including security features and support for specialty processors, such as a device announced last week that's designed to run business intelligence, ERP and CRM workloads. IBM said that the low-cost machine can also be upgraded to an Enterprise Class configuration.

Learning Curve

Last year, Mark Shackelford, IT director at Baldor Electric Co. in Forth Smith, Ark., consolidated three mainframes and eight IBM Unix servers onto a single z990 mainframe. Shackelford said he thinks the System z9 Business Class model would be "a great place to start" for companies that don't already have mainframe experience.

"The hard part of getting nonmainframe people to the platform — and this is IBM's biggest challenge — is the learning curve," he said. "People just don't understand the architecture. Once you learn it, though, you find it's a lot easier to administer than a Windows and Unix environment."

Shackelford added that, based on his experience, users moving to a mainframe should expect it to take six months to train their IT staffs and about a year for workers to achieve mainframe proficiency. ▸

Users Embracing 'BI for the Masses'

Training, easier interfaces can foster use of tools

BY HEATHER HAVENSTEIN
ORLANDO

Several users at Information Builders Inc.'s (IBI) Summit 2006 user conference here last week are embracing a "BI for the masses" philosophy with new projects to quickly move business intelligence reports and analysis to workers, suppliers and customers.

For example, Rich Pedott, vice president of sourcing, planning and allocation at Eastern Mountain Sports Inc. in Peterborough, N.H., said his company is testing a new system that promises to let customers access BI data from a dashboard.

"[The dashboard] provides you a very cheap way to do collaboration," Pedott said. "You are no longer requiring your supplier or your vendor community to make an investment in something like EDI. You can send them a [customized] dashboard that is relevant just to them. [Then] they can get insights and help drive your business."

Pedott, a conference attendee, declined to provide more details about the project, contending that it provides a competitive advantage in the retail industry.

IBI last week announced that it has integrated its WebFocus BI tools with subsidiary iWay Software Inc.'s middleware. That will allow users to embed analytics into user business processes using Web services, IBI officials said.

E-mail Access

IBI last week also touted its Active Reports tool, which began shipping April 10, as a means to extend BI to new internal and external users. The tool allows users to drill down into a report via e-mail as if they were connected directly to a BI report server.

Since December, Air Canada has been using a beta version of Active Reports, which it hopes can be used to provide reports to its international sales force, said Chantal Berthiaume, manager of marketing intelligence and information delivery at the Montreal-based airline.

The airline may also use the tool to provide reports to customers — something the company had earlier decided not to do, she said. "There is no way we could invest in the infrastructure," Berthiaume said. "[Now] we would just have to send them an e-mail."

Rebecca Price, applications administrator at Dillard's Inc. in Little Rock, Ark., said she hopes the department store chain can roll out Active Reports to help its buyers more easily access current product sales data while on the road.

Price said Dillard's has decided to extend the use of IBI's WebFocus tools beyond the accounting department, the company's only current user.

NEW PRODUCTS

Information Builders Inc.

- **An integrated tool** incorporating the WebFocus BI tools and the Web services designer tool in subsidiary iWay Software's SOA Middleware suite.
- **Power Painter**, a development tool designed to use Asynchronous JavaScript and XML for building thin-client BI applications to be accessed by a large number of users.

Dan Vesset, an analyst at Framingham, Mass.-based IDC, said operational BI — embedding BI in the business processes used by front-line workers — is becoming more common as companies seek tools to help make better business decisions.

However, he and several users noted that companies must also make sure they provide an easy-to-use interface.

Robert Richards, director of application development at Carlson Hospitality Worldwide Procurement Group Inc. in Minnetonka, Minn., said operational BI applications must be as easy to use as an Internet search engine. "My end users have difficulty turning on the computer [and] with the concept of double-clicking on the mouse," Richards said.

Within the past four months, Carlson, a lessor of hotels, resorts and other properties, has rolled out WebFocus dashboards to its hotels.

Patrick Yip, a director at Pershing LLC, which provides securities clearing and settlement services to institutional investors and investment advisers, agreed that training is key to any effort to expand access to BI tools.

Pershing requires that its BI interfaces be as easy to use as hotel reservation sites.

About 70,000 Pershing users can access WebFocus BI reports, Yip said. This year, he added, the Jersey City, N.J.-based company plans to merge its reporting tools with an undisclosed workflow engine to monitor the service levels for business processes, such as the time it takes to mail checks to customers. ◗

Feds Scrambling to Meet Looming ID Card Deadline

BY JAIKUMAR VIJAYAN

The U.S. government is studying whether to create a shared technology and services infrastructure to help agencies issue new Personal Identity Verification (PIV) smart cards to all employees and contractors beginning in October.

Such a common infrastructure would make it easier and cheaper for agencies to enroll and register people in the PIV program, said David Temoshok, director for identity policy and management at the U.S. General Services Administration. The GSA and the Office of Management and Budget are undertaking the study, he said.

Federal agencies are required to distribute smart cards by Oct. 27 under Homeland Security Presidential Directive 12 (HSPD-12), which was issued in August 2004. The directive requires that smart cards support biometric identifiers.

"If we can put a common infrastructure in place for agencies to start enrolling and registering individuals, it would be a huge and important step" in speeding adoption of smart cards, Temoshok said.

The infrastructure would include common services for capturing identity and biometric information and the systems needed to record that information, he said.

A separate GSA executive steering committee is studying funding and governance issues and is working to determine which agencies should be responsible for overseeing a shared infrastructure, said Temoshok. Management of the infrastructure could be outsourced, officials said.

More Mandates

HSPD-12 also mandated that federal agencies establish processes for verifying the identities and backgrounds of all federal employees. That effort was completed last October as required by the directive.

The government's exploration of a shared infrastructure comes as federal agencies scramble to install by the October deadline required devices such as PIV-compliant card readers, biometric readers and physical access-control devices.

The National Institute of Standards and Technology has created a set of conformance guidelines for vendors of smart cards and middleware technologies. NIST has also established test laboratories where vendors of smart-card technologies can get products certified for conformance with PIV standards, said Curt Barker, a NIST program manager.

So far, only two vendors have been issued compliance certificates, and several others are going through the process, he said.

Milestones

HOMELAND SECURITY PRESIDENTIAL DIRECTIVE 12

Oct. 26, 2005:
All federal agencies are required to implement background-check processes to verify the identities of employees and contractors.

Oct. 27, 2006:
Federal agencies must start issuing Personal Identity Verification smart cards.

FY 2007-FY 2008:
Agencies are required to complete issuance of cards.

"People may be underestimating the logistical, technical and organizational challenges" involved in rolling out the cards, said David Troy, practice manager at Plano, Texas-based Electronic Data Systems Corp.

Even when PIV-compliant products do become available, considerable integration work will be required, said Neville Pattison, director of technology and government affairs at Axalto Inc., a smart-card manufacturer in Austin. "There's a lot of work to do and perhaps not enough time," he said.

Some agencies have also been forced to hustle to find funding to meet the requirements of the unfunded program, said Manoj Srivastava, CEO of Infomosaic Inc., a Santa Clara, Calif.-based maker of a workflow software product for registering individuals to the PIV program.

"Some agencies have done nothing. Some have done a little," he said. "A lot of them are trying to do the minimum. There really is no money to push this forward." ◗

BRIEFS

Bugs Found in Symantec Tool

Security researchers have found three bugs in Symantec Corp.'s Scan Engine security software. Attackers could exploit the flaws to gain control of the Scan Engine server or to inappropriately gain access to files. Security firm Rapid7 LLC discovered the bugs and said the most serious ones were caused by a fundamental design flaw in the product's authentication mechanism. Symantec urged its customers to patch the vulnerabilities.

RSA Purchases PassMark for $44M

RSA Security Inc. has acquired PassMark Security Inc., a vendor of lightweight authentication technology, for $44.7 million in cash and stock. RSA said the acquisition of PassMark will help the company become a "strategic hub" for the financial services industry. RSA will add the PassMark products to its Adaptive Authentication product line.

Microsoft Unveils IE 7 Beta Software

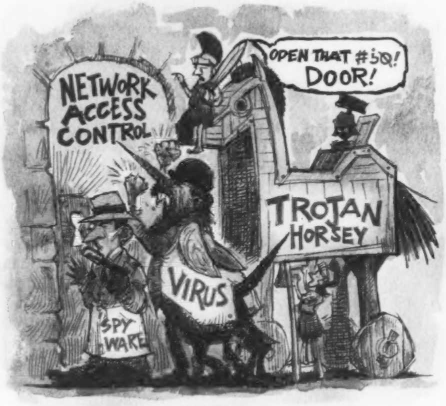
Microsoft Corp. has launched a beta version of its Internet Explorer 7 browser, emphasizing new security features designed to overcome problems that plagued earlier versions of the Web browser. The new version includes a phishing filter, which informs users if they are visiting known phishing sites. The updated browser is designed for the Windows Vista operating system.

Jury Awards $306M To Rambus in IP Suit

A jury found that Hynix Semiconductor Inc. infringed on a series of Rambus Inc. patents and awarded the latter company $306.5 million in damages. The jury in U.S. District Court for the Northern District of California found that Hynix infringed on all 10 Rambus patent claims debated in the trial. Hynix officials did not respond to a request for comment on the ruling.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

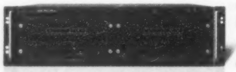


MATTHEW FAULKNER

Getting a Knack For NAC Tools . . .

. . . that help keep nefarious programs off your network can be a gnarly task – at least for now. Stacey Lum, CEO of InfoExpress Inc. in Mountain View, Calif., says that effective use of network access control (NAC) software involves no small amount of complex configuration work on the part of IT. And security appliances often have trouble scaling up to meet the demands of large networks, Lum says. But that will all change with the arrival of Dynamic NAC from InfoExpress in July, he claims. The software runs on the company's CyberGatekeeper appliances, and agent code is distributed across corporate networks to endpoint devices, primarily PCs. Some trusted endpoints can be designated as "enforcers" that interrogate new devices attempting to log onto your network to ensure that they comply with access policies, Lum says. Systems that aren't compliant get quarantined until CyberGatekeeper remediates their shortcomings. Stand-alone pricing for Dynamic NAC starts at $49 per endpoint.

Across town, Vernier Networks Inc. is taking "a full life-cycle approach to access control," says Rod Murchison, the company's vice president of marketing. Vernier's appliances can handle end-user authentication as well as endpoint inspection, authorization and remediation. (Lum says Dynamic NAC won't authenticate users.) Vernier's EdgeWall 8800 appliance goes into beta later this month, with general availability expected in the fall. The $29,900 device offers significant performance improvements over the current 7000 model, Murchison says. For example, the 8800 can handle data rates of 40Gbit/sec., which is 40 times more than the 7000 supports.


Vernier says its EdgeWall 8800 appliance can multitask.

Open-source dreamers are . . .

. . . flocking to Oregon. The state's official slogan is "We love dreamers," and Oregon seems to be attracting plenty of open-source devotees who dream of unseating commercial software inside IT departments. Bob Repine, director of the Oregon Economic & Community Development Department in Salem, says that jobs at open-source companies pay 80% more than the state's average wage of $35,000, which is why the government is backing the development of an open-source business "cluster" within the state's economy. In addition to a handful of open-source companies, the state is home to Oregon State University's Open Source Lab in Corvallis, which hosts the mother code for Mozilla, MySQL, Apache and the holiest of open-source holies: the Linux kernel. There's also Beaverton-based Open Source Development Labs Inc., where Linus Torvalds, the high priest of Linux, now works. State officials estimate that the open-source cluster will create 3,000 jobs in Oregon by 2010.

1k
Jobs related to open-source in Oregon today, says Oregon Innovation Council.

Don't get stuck in the middle of . . .

. . . a middleware transaction. That's what's happening to a lot of applications, claims Bob Harmon, CEO of Solstice Software Inc. in Claymont, Del. His company's Integra Enterprise Suite does quality-assurance checks on how well Tibco, MQSeries, WebMethods and other middleware connectors are, well, connecting various parts of your applications. Harmon says that for IT staffs, the arrival of service-oriented architectures adds another "huge mountain to climb" for integration. Solstice will start adding quality assurance tools for Web services to Integra next month. Pricing for the software starts at $7,000 per QA staffer.

HARMON: Middleware needs QA tool.

Put your Notes on a stick . . .

. . . a memory stick, that is. Or any other type of Universal Serial Bus storage device, for that matter. IBM plans to give end users the ability to store a full Notes client on USB fobs by year's end, says Carl Kranzel, a senior technical staff member and IBM master inventor. Third-party Notes apps will run on USB flash devices as well, Kranzel says. End users won't have to lug their business laptops between work and home to check e-mail anymore, he explains. They can simply plug the USB-based client into their home PCs. The software will even work on iPods, Kranzel says.

120k
Notes user sites, says IBM.

Secure messaging content across . . .

. . . many communications protocols with one tool. Andrew Graydon, chief technology officer at BorderWare Technologies Inc. in Mississauga, Ontario, says the MXtreme Infinity software that his company plans to ship late this summer will enable IT to apply content policies across e-mail, instant messaging, Web and even voice-over-IP protocols via a single administrative console. It even has an "objectionable content filter" — which Graydon helpfully suggests that you should review in private. ▸

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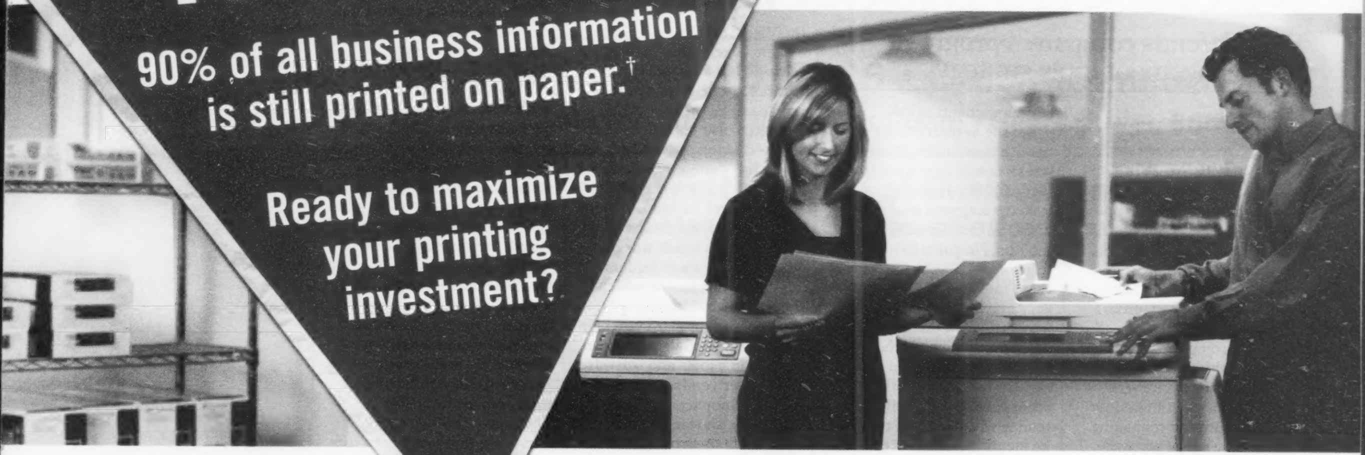

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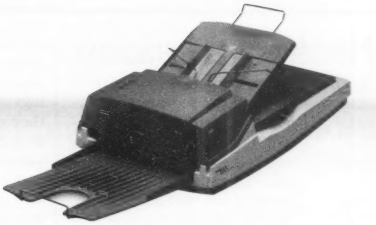

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[†]AIIM Industry White Paper on Records, Document and Enterprise Content Management for Public Sector, 2005.

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LEXMARK Kodak RICOH

Users Seek More Info on Microsoft's Model Plan

Exec defends company's progress on management tools strategy

BY ERIC LAI
SAN DIEGO

MICROSOFT CORP. last week took several steps designed to bolster its System Center line of management tools. But some attendees at the Microsoft Management Summit here said they were disappointed by the lack of new information about the company's Dynamic Systems Initiative.

DSI is Microsoft's overarching strategy for making systems more self-managing through the use of software models in which IT staffs can capture data about their computing environments. The System Center products, including Systems Management Server (SMS) and Microsoft Operations Manager, are also key components of DSI.

But the System Center announcements made at last week's conference were "more tactical than strategic," said a systems engineer who asked not to be identified. "In six months, I'm going to have to think about how to implement these tools. What I got was very much an appetizer. What I needed was a full entree."

"Some of the features they showed were nice, but I was looking for more architect-scale news," said another attendee who also didn't want to be identified.

In an interview, Bob Muglia, senior vice president of Microsoft's server and tools business, said that the company shipped the first design-side version of its System Definition Model (SDM) as part of the Visual Studio 2005 Team System development tool set released last fall. SDM is the technology that can be used to create models as part of DSI.

Muglia also pointed to Distributed Management Task Force Inc.'s announcement last week that it had accepted the Web Services for Management specification as a preliminary standard. Microsoft was one of the development leaders on WS-Management, which it views as a key element of DSI, because the standard will help ease interoperability between Microsoft's tools and software from other vendors.

"We announced DSI three years ago, and since then, we've kept on driving forward and filling in the blanks," Muglia said.

System Center competes with product suites such as Hewlett-Packard Co.'s OpenView, IBM's Tivoli and CA Inc.'s Unicenter. At last week's conference, Microsoft announced Service Desk 2007, a help desk application that currently is in beta testing. It also showed off features that will be in the upcoming Version 4 of SMS, including support for Microsoft's Network Access Protection technology.

The NAP tools will be able to check PCs running Windows Vista to see if they have the latest security updates. If not, SMS will prevent them from accessing a corporate network until the required updates are installed and will notify users about their status via pop-up messages.

"You can patch all day, but what happens when a user logs in before getting the latest updates?" said Bryan Henson, a senior systems engineer at Pioneer Natural Resources Co. in Irving, Texas. The oil and gas company uses SMS 2003 to manage 1,600 PCs and 400 servers worldwide. Henson said NAP is a feature that Pioneer "had been asking Microsoft for for a long time."

Service Desk 2007 will give help desk staffers a single view for tracking trouble tickets. "The first version won't have all the cool features you'll want, but I think the product will be good enough that I'd give a serious look at the beta," said Dan Twing, an analyst at Enterprise Management Associates in Boulder, Colo. ▸

Software Schedule

Microsoft's System Center development road map

JUNE 2006
- Second beta of SMS Version 4, which is being renamed System Center Configuration Manager 2007
- First public beta of Microsoft Operations Manager upgrade, to be called System Center Operations Manager 2007

SECOND HALF OF THIS YEAR
- Commercial release of Operations Manager 2007

FIRST HALF OF 2007
- Shipment of Configuration Manager 2007 and a virtualization management tool code-named Carmine

SECOND HALF OF 2007
- Expected time frame for deliveries of Service Desk 2007 and Release 2 of Operations Manager 2007

GM Security Chief Gives Hackers a Lesson

BY JAIKUMAR VIJAYAN

General Motors Corp.'s chief information security officer, **Eric Litt**, *used the chance to speak at the European Black Hat Convention in Amsterdam earlier this year to reach out to the hacker community and explain the problems large corporations face when dealing with software vulnerabilities. He discussed security issues in an interview with* Computerworld *last week.*

What are responsible vulnerability disclosure and remediation practices? I broke the problem into a bunch of different viewpoints when I did the Black Hat thing. If you take a look at the exploiter's view of the world, what motivates them? Fame, fortune, curiosity and creativity. They want attention, they want money. If you look at the ethical researchers' world, they are motivated by the same things. The differentiator is what they do with the information. So as the CISO of a large company, don't I want things to be discovered? Absolutely, because I want to make sure vulnerabilities are plugged. I want people to be rewarded for the work they have done. If they are not rewarded on the clean side, they'll be rewarded on the dirty side.

How should bugs be disclosed? Suppose there's a vulnerability in some platform and you go tell the world about it. Some researchers would say that's exactly what you should [do], because otherwise the vendor won't address it. I say, "You are telling people how I can be compromised, and that's a big problem." [On the other hand], you discover something and you tell vendor XYZ that there's a vulnerability in their product and they do nothing for 200 days. We haven't created between the vendor, the ethical researcher and the business consumer an environment that we can all benefit from. It is doable, but I'm not sure anybody is really taking on that challenge.

How should vendors respond to vulnerabilities found in their products? In an ideal world, there wouldn't be any vulnerabilities and they wouldn't have to disclose anything. But that is not the real world. Really critical vulnerabilities must be plugged immediately. On the other hand, what is critical? I think what you are seeing in the industry today is that most of the vendors are trying to be very conservative in their ratings of vulnerabilities. What they are really trying to do is limit the exposure that gets generated from them having had a vulnerability.

What is the ideal vendor response? It's very context-dependent. In my position, of course, I'd like to know everything [relating to a vulnerability]. But is that reasonable? I think enough information should be released so that people can make a reasonable assessment of how vulnerable they are. But we don't want to provide information that helps unethical people compromise systems before issues can be addressed.

How do you respond to disclosure of bugs? We don't continuously want to have our environment in turmoil from being forced to constantly patch and patch in rapid fashion without having the ability to validate that these patches are not going to hurt us. We need to have time to do due diligence.

Microsoft has drawn a lot of criticism for its security failures. How do the other major vendors compare? I think Microsoft is an easy target. You can complain about Microsoft all you want, but you also have to recognize they have made significant investments, and I think they have made significant progress. They are still not where we want them to be, but they are significantly better. Then you start looking at the other people and say, "What kind of a job are *they* doing?" There was one who released 82 or 83 patches very recently. So Microsoft is not the only one with this problem. Quite frankly, I think some other vendors are in denial. They worry me the most. ▸

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9:20am to 10:00am		**Competing on Analytics** Thomas Davenport, President's Distinguished Professor of Information Technology and Management, Babson College
10:00am to 10:15am		**Refreshment and Networking Break**
10:15am to 10:50am		**Using Technology to Get Better Answers Faster** Keith Collins, Senior Vice President and Chief Technology Officer, SAS
10:50am to 11:25am		**The Top Ten Success Factors in Business Intelligence** Gregory McMillan, Senior Manager, IT Systems, Ford Motor Company
11:25am to Noon		**BI at Pfizer: A Case Study** Danny Siegel, Director, Human Health Information Technology, Pfizer Global Pharmaceuticals Division, Pfizer, Inc.
Noon		**Optional Luncheon and Presentation** Bill Hostmann, featured Research Vice President, Gartner

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BRIEFS

NEC Victim of Piracy Ring; Probe Ongoing

NEC Corp. acknowledged today that the company has been the victim of a large-scale piracy ring that sold both counterfeit NEC goods as well as NEC-branded products that the company does not even manufacture. An NEC spokesman said that the company is still investigating to determine where and by whom the counterfeit keyboards, writeable CDs and DVDs, and MP3 players were made and sold.

Avocent to Buy LANDesk for $146M

Avocent Corp., a maker of infrastructure management software, has agreed to buy LANDesk Group Ltd. for $146 million. LANDesk, a maker of desktop management products, was once part of Intel Corp., which spun it off into a separate company in 2002. The LANDesk acquisition follows Avocent's purchase of Cyclades Corp. earlier this year. Cyclades specializes in Linux-based management tools.

Microsoft Purchase to Boost Asset Tracking

Microsoft Corp. has acquired AssetMetrix Corp., a small Ottawa-based provider of Web-based asset management services. Officials said AssetMetrix's technology will help improve the asset-tracking capabilities in Microsoft's System Center family of management applications. Financial terms of the deal weren't disclosed.

NEC Merges North American Divisions

NEC plans to merge three North American units – NEC America Inc., NEC Solutions (America) Inc. and NEC USA Inc. – into a single company. The merged company, to be called NEC Corporation of America, will be headquartered in Irving, Texas. The merger will close on July 1. The new company will focus on IT and network systems, according to NEC.

World Users Push for Additional Training, Upgrades From Oracle

Hope company's extension of support is a harbinger of more improvements

BY MARC L. SONGINI
NASHVILLE

WORLD ERP users last week said they hope that Oracle Corp.'s promise to support the software indefinitely will also mean improvements to the vendor's technical assistance programs and a clear upgrade process.

Users of the former J.D. Edwards software noted that Oracle's commitment to World, announced late last month, comes after years of uncertainty about the product's future.

Despite the resurgent support for the World green-screen applications, users at last week's Collaborate 2006 Oracle user conference here said there are still problems that need to be fixed.

For instance, at a time when World training is vital for users, Oracle has been "behind the curve" in providing such programs, said conference attendee Gary Riley, a systems analyst at Matanuska Telephone Association Inc. in Palmer, Alaska.

Riley said that as veteran World users leave companies, such training programs are needed to prepare the next generation of IT staffers.

Riley is a member of Collaborate co-sponsor Quest International Users Group, which includes users of Oracle's World and its follow-on OneWorld and OneWorld XE ERP applications. All of the products were developed by J.D. Edwards, which is now owned by Oracle.

A Matter of Timing

Some attendees at the conference also noted that Oracle's decision to extend World support beyond the previous 2013 termination date comes too late to help many longtime customers.

J.D. Edwards' lack of support for the line in recent years, which was not addressed until it was acquired by PeopleSoft Inc. and then by Oracle, along with a lack of upgrades, led many sites to replace the software, users said.

For example, the IT staff at Benderson Development Corp., a Buffalo, N.Y.-based real estate firm, is preparing to replace World with EnterpriseOne, said Dave Hyzy, director of IT at the company.

World has served Benderson well, Hyzy said at the conference, but real estate industry-specific upgrades have been lacking.

Hyzy said Benderson decided to replace World rather than have its internal development team customize the software.

Elizabeth Goins, systems analyst for the Manatee County School District in Florida, noted that many of the problems with World began long before Oracle acquired the product.

Goins, who is also director of World advocacy at Quest, said that many customers stopped participating in user group activities as support for the product languished while it was owned by J.D. Edwards. Therefore, many users lost the ability to communicate directly with Oracle developers and managers through Quest's channels.

Since Oracle's acquisition of PeopleSoft, she noted, the lack of communication has caused confusion among some World users about Oracle's plans for the applications.

COLLABORATE 2006

Oracle Announcements

- Indefinite support and upgrades for Siebel, PeopleSoft Enterprise and EnterpriseOne, J.D. Edwards World, and Oracle E-Business Suite applications
- Plans to integrate Siebel 7.8 with Oracle Fusion middleware
- Plans for 1,000 worldwide events to break down Oracle's strategy

In addition, a number of World users said they don't know what will be in the next iteration of the product, Version A9.1, or exactly when it will ship. A couple of customers at the conference said they were unsure of what educational and training resources were available from Oracle.

With Oracle's renewed commitment to the product, Goins said the user group and Oracle will more aggressively reach out to World users through Quest's Web site and by conducting surveys on user needs.

John Schiff, vice president and general manager of the World product line at Oracle, said the company is indeed working to improve communication with World customers. Oracle is also beefing up World technical and training resources for users, he added.

Schiff also noted that Oracle has created a World-specific blog for users and online training programs. In addition, company executives have been attending regional user group meetings.

"We can never do enough with communication," Schiff said. "But it's a two-way street. We've got to share information through the staff with users. And we need them to also participate, to listen and respond and give us feedback." ◗

Oracle Vows Unlimited Support for Acquired Apps

NASHVILLE

ORACLE last week assured its installed base that there will be no forced marches to Fusion, its next-generation set of applications.

At Oracle's Collaborate 2006 user conference here last week, the company announced that it will indefinitely support and upgrade the products it gained through its acquisitions of PeopleSoft and Siebel Systems, as well as its own line of applications.

Oracle had previously committed to support the products only through 2013.

Jesper Andersen, Oracle's senior vice president of application strategy, said the move was made to ease the fears of users of the older products. "We have 30,000 customers and need to make sure we treat them well [so] they'll stay with Oracle a long time," he said.

Pat Dues, president of the independent Oracle Applications Users Group, said the Atlanta-based organization plans to poll its members to get a collective judgment of the announcement. The OAUG was a co-sponsor of the Collaborate event.

Speaking for herself, Dues said Oracle's move does make sense because it relieves customers from any pressure of a forced migration to Fusion. Some companies had concerns about the cost of moving to Fusion, she noted.

Dues, also project manager for the city of Las Vegas and a user of the Oracle E-Business Suite, said her operation is interested in moving to Fusion and its next-generation technology. "We're anticipating by bringing these applications together, we'll get the best of PeopleSoft and Siebel," she said.

– MARC L. SONGINI

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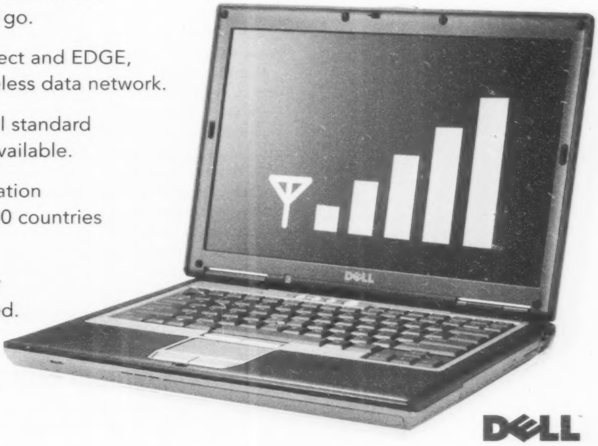

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GLOBAL DISPATCHES

An International IT News Digest

Protesters Aim to Foil U.K.'s ID Card Plans

LONDON

A CONSUMER GROUP in the U.K. is urging residents to renew their passports this month in order to avoid being listed in a national identity registry for the next 10 years.

The London-based group, called No2ID, is campaigning against the planned adoption of national ID cards because of concerns that the security of personal data could be put at risk in the ID card system.

Under the Identity Cards Act, which was approved by Parliament this year, the passport application and renewal process will be used to collect biometric data and other information that will be stored on cards and in the national registry.

Phil Booth, national coordinator for No2ID, said that since the registry hasn't been set up yet, renewing now would allow citizens to avoid being included in the registry's database for the 10 years their passports will be valid.

No date has been set for starting to collect data for the ID cards, said a spokeswoman for the U.K. government's Home Office. Use of the identity registry is scheduled to begin in 2008, she added.

■ NANCY GOHRING, IDG NEWS SERVICE

GLOBAL FACT

$90.9B

The projected size of the market for IT outsourcing services in Europe, the Middle East and Africa in 2009.

SOURCE: GARTNER INC., STAMFORD, CONN.

U.S. Firm Buys Stake In Deutsche Telekom

BONN

THE BLACKSTONE GROUP, a New York-based private equity firm, has agreed to pay about €2.7 billion ($3.3 billion U.S.) to buy a 4.5% stake in Deutsche Telekom AG from KfW Bankengruppe, a bank that's owned jointly by Germany's federal and state governments.

Frankfurt-based KfW's ownership stake in Deutsche Telekom will shrink to 17.3% once the sale closes. But the bank will continue to be the Bonn-based telecommunications company's largest shareholder; the German government holds a separate 15.2% share.

The addition of Blackstone as an investor comes as Deutsche Telekom CEO Kai-Uwe Ricke is moving to cut operating costs by reducing the company's workforce. At the same time, the company plans to spend €3 billion ($3.7 billion U.S.) to build a high-speed fiber-optic network that will operate in 50 German cities.

■ JOHN BLAU, IDG NEWS SERVICE

Survey Shows Rise in Cost of U.K. Breaches

LONDON

THE OVERALL cost of security breaches at large U.K. companies rose by about 50% between 2004 and 2005, according to a study that was commissioned by the U.K. government and released last week at the Infosecurity Europe 2006 conference here.

However, the biannual survey of 1,000 companies of varying sizes also found that the number of breaches reported by large businesses in the U.K. dropped by about half from year to year because of increased security budgets.

Overall, the percentage of companies that reported having security incidents dropped from 74% to 64%. "That's good news," said Alun Michael, the U.K.'s minister of state for industry and regional economies. "But it's no cause for complacency."

■ JEREMY KIRK, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

Intel Corp. has opened a research and development center for multicore processors at its lab in Braunschweig, Germany. The chip maker had said last year that it would shift the Braunschweig facility's focus from designing chips for optical networks to developing "many-core" processors and related software.

■ JOHN BLAU, IDG NEWS SERVICE

Microsoft Corp. has agreed to spend $900 million over the next five years to promote the growth of the IT industry in China, according to a statement released by the company and China's National Development and Reform Committee. Microsoft plans to buy $700 million worth of hardware from Chinese vendors and invest $200 million in Chinese software vendors.

■ ELIZABETH MONTALBANO, IDG NEWS SERVICE

Malmö Aviation, an airline in Malmö, Sweden, has awarded a five-year IT operations management contract worth 24 million Swedish crowns ($3.2 million U.S.) to Unisys Corp. Under the deal, Unisys will manage the airline's business applications and help desk and provide on-site technical support. Malmö Aviation's servers will be moved to a Unisys facility in Alingsås, Sweden.

Vendors Promise Network, Storage Management Links

BY SHARON FISHER

Users last week had mixed views of growing vendor efforts to create products that can merge network and storage management functions.

"It's a logical evolution," said Bill Mahoney, a network architect for the U.S. Air Force at Hanscom Air Force Base in Bedford, Mass., during the EMC World user conference in Boston last week.

On the other hand, "I don't see the natural fit to bring that all under one umbrella," said John Hegner, vice president of technology services at Liberty Medical Supply Inc., a user of EMC Corp. storage products in Port Saint Lucie, Fla.

"We have separate tools to manage our network and to manage our storage. I think the skill set and the tools to manage each product are different, and I don't see the big value of bringing them together," Hegner said.

Liberty Medical uses EMC's Navisphere storage management software and EPICenter network management products from Extreme Networks Inc. in Santa Clara, Calif.

Meanwhile, several big storage vendors have disclosed plans to offer integrated storage and network management tools over the next year or two.

For example, Hopkinton, Mass.-based EMC announced plans at its user conference to integrate over the next 18 months its ControlCenter storage management functionality with the Smarts network management product family, which EMC acquired in 2004.

Hewlett-Packard Co. plans to incorporate over the next six to 12 months storage management technology gained with last October's acquisition of AppIQ Inc. into its OpenView network management products, said Ash Ashutosh, chief technical officer of storage management software at the firm's StorageWorks division.

HP's storage management software already works with network management software from competitors such as BMC Software Inc. and IBM.

> **"I don't see the natural fit to bring that all under one umbrella.**
>
> **JOHN HEGNER,** VICE PRESIDENT OF TECHNOLOGY SERVICES, LIBERTY MEDICAL SUPPLY INC.

IBM and network management tool makers BMC, CA Inc., Fujitsu Ltd. and HP Software Inc. agreed to jointly develop an industry standard for configuration management databases to ease the integration of storage and network management systems, said Kristof Kloeckner, vice president of development for IBM's Tivoli unit.

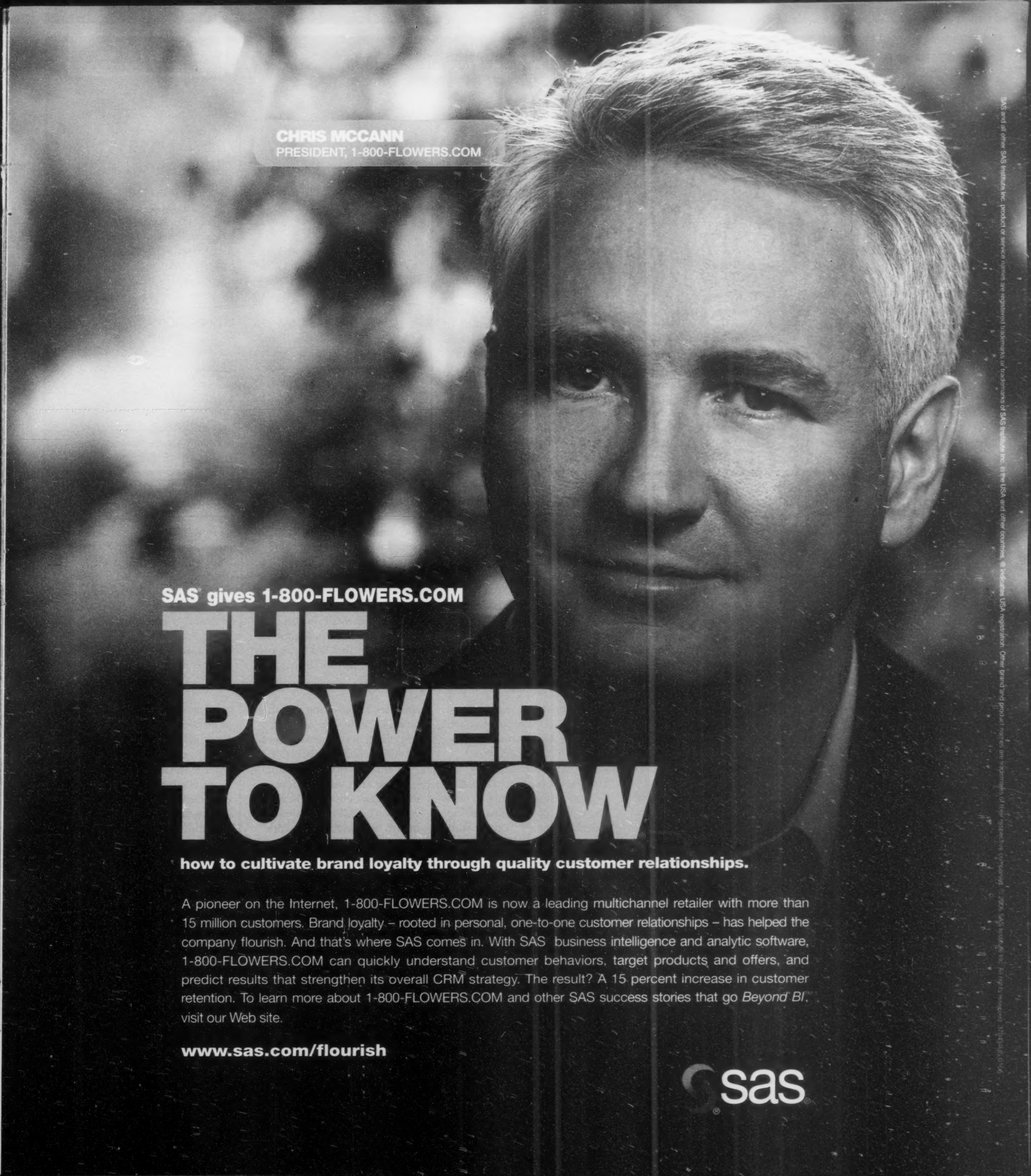
And Sun Microsystems Inc. this week will unveil several products that will bring it closer to offering combined storage and network management capabilities, said James Whitemore, vice president and chief marketing officer for Sun's data management group.

Jed Dobson, systems architect at Hanover, N.H.-based Dartmouth College, which uses Sun storage systems, suggested that the integration of storage and network management products may be just a ploy by vendors to maintain control of data centers.

"Maybe they just don't want to give up control of the management platform," Dobson said.

"There's two ends that matter, and that's the user and the data," said Steve Duplessie, an analyst at Enterprise Strategy Group Inc. in Milford, Mass. "Data sits on storage and traverses networks to get to a user, where it becomes useful. Having those things integrated makes intuitive sense, whether you pick Smarts or OpenView or Sun."

Duplessie acknowledged that users looking at the trend from a day-to-day tactical perspective might be less interested in it. "If something works," he said, "why on earth would you fix it?" ▸



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Continued from page 1

CA

much of the blame on the way it is accounting for revenue from recent acquisitions, it also pointed to "a slow bookings start" during the quarter.

John Swainson, CA's president and CEO, said he is confident that the company is on the right track and that the changes made internally since he was hired in November 2004 will have "a beneficial impact" in the fiscal year that started this month. A full turnaround won't happen overnight, though — Swainson said last fall that it would likely take until 2008 to complete his planned makeover of CA.

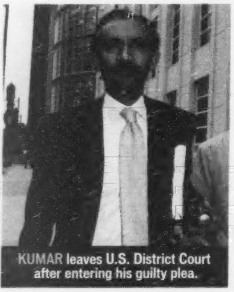
Dale Ross, a senior database consultant at Polaris Technologies Ltd. in Calgary, Alberta, is a longtime user of CA products. He said CA is taking the right steps on ethics issues in the wake of the accounting scandal. But he added that the company's ability to improve its financial performance and continue to develop useful technologies is still unproven.

"The proof is in the pudding," Ross said. "We hear the CA brass making the right comments. But the question is whether they follow through."

To Ross, Kumar's guilty plea was a positive step toward encouraging appropriate behavior by corporate executives in general. "Once you see guys like Sanjay led away in handcuffs, maybe it will put the fear of God in others," he said.

Kumar and co-defendant Stephen Richards, a former head of worldwide sales at CA, both pleaded guilty to all eight of the counts that they were indicted on two years ago. "I know my conduct was wrong. . . . I apologize for my actions," Kumar said at a hearing in federal court in Brooklyn, N.Y., according to a Reuters report.

The two executives admitted that prior to and during CA's 2000 fiscal year, they orchestrated an accounting scheme under which the company — then called Computer Associates International Inc. — falsely reported hundreds of millions of dollars in revenue during quarters in which the deals that generated those revenues had not been finalized.


THE ASSOCIATED PRESS

KUMAR leaves U.S. District Court after entering his guilty plea.

For example, the indictment charged that Kumar was flown to Paris on CA's corporate jet in early July of 1999 to negotiate and sign a $32 million software licensing agreement with a customer. The deal was backdated to June 30, and about $19 million in revenue was improperly recognized in the quarter that ended that day, prosecutors said.

The goal of the accounting scheme was to ensure that CA would meet or exceed its revenue and earnings projections in each quarter, they added.

The guilty plea "is unfortunate for Sanjay and CA, but it's another example of the pressures from Wall Street on public companies to make their numbers each quarter," said Steve Rummel, vice president of data services at Maher Terminals Inc., a container terminal operator in Berkeley Heights, N.J., and a former CA customer. "CA will survive, but it's definitely a black eye for the corporation," Rummel said.

After the guilty pleas, CA issued a statement saying that it is "a dramatically different organization than we were two years ago." In addition to focusing on a growth strategy, Swainson and his management team have set up an organizational structure "that promotes integrity, compliance and good governance," CA said.

Rich Ptak, an analyst at Ptak, Noel & Associates in Amherst, N.H., said Swainson has furthered Kumar's efforts to improve customer relationships and change the widely held view that CA wasn't friendly toward its users. "That old image of CA seems to be in the past," Ptak said.

Kumar and Richards are scheduled to be sentenced on Sept. 12. Both men could face up to 20 years in jail, but the maximum sentence will likely be reduced because of their guilty pleas, said a spokesman for the U.S. Attorney's Office for the Eastern District of New York.

CA, meanwhile, is still subject to a deferred prosecution deal. Under that deal, it agreed to pay $225 million into a fund for compensating victims of its fraudulent activities and take various steps to strengthen its corporate governance procedures. If CA is deemed to have complied with its obligations after an 18-month period that ends in September, the U.S. attorney will seek to dismiss all fraud charges against the company. ◗

CA Expects Small Q4 Profit at Best

CA SAID last week that it may just break even in its fourth quarter because of the lower-than-expected revenue it will report.

The company announced preliminary results for the quarter that ended March 31, saying that it now expects to report a small profit at best. Total revenue will be between $940 million and $950 million, down from an earlier projection of $975 million to $1 billion, CA said.

"Our results for the quarter were not in line with our expectations," John Swainson, CA's president and CEO, said in a statement. He noted, though, that the software vendor is "undergoing a transformation – of our products, our people, our processes, our relationships with customers, our go-to-market strategy and much more."

According to CA, "a significant portion" of the revenue shortfall will be made up in future quarters. The company said it had to defer the reporting of sales made by recently acquired vendors after switching them to its subscription-based accounting model, under which revenue is recognized on a monthly basis over the life of a contract.

Fourth-quarter profits were also affected by increased sales expenses, primarily involving commissions, the company said. It added that those expense increases will be partially offset by reductions in variable compensation programs, including management bonuses.

– CRAIG STEDMAN

Continued from page 1

Health Czar

departure nonetheless could speed the move toward a national health information network, prompting a shift from planning to action.

Brailer did a "spectacular job" of building awareness among Congress and the public regarding how much work is needed to create an EMR network, Wade said. "He's the one who had to be the standards advocate while at the same time navigating the political issues to gain and sustain momentum," Wade said.

Mark Frisse, a professor of biomedical informatics at Vanderbilt University in Nashville, said Brailer brought a human face to what were intangible issues. Through that effort, he said, "the health care IT horse is out of the barn, and sufficient consensus exists that rapid acceleration is possible."

Frisse, who is working to develop a regional health information organization in Tennessee, suggested that the next coordinator work to foster stronger collaboration among federal agencies. "People want a coherent view of the federal government and a sense that agencies are working together," he said. "States are going to be critical in the next stage of evolution, and collaboration on state initiatives is important."

Frisse also said the new leader must continue Brailer's work on building a national health information network and on creating EMR technology standards.

J. David Liss, vice president of government relations and strategic initiatives at New York-Presbyterian Healthcare System in New York, said the new coordinator should have experience in a large-scale health care environment and credibility with the informatics community.

Brailer's successor must also ensure that the effort doesn't focus on the use of metrics to grade physicians' work or involve calculating payments based on such a grade, Liss said. The coordinator should instead work to streamline the health record process, he noted.

"Clinicians may view health IT more negatively if they perceive the technology's main function as aggregating and reporting data from their practices," he said. "This does not make the doctor's work easier; it merely supports another regulatory burden." ◗

David Brailer

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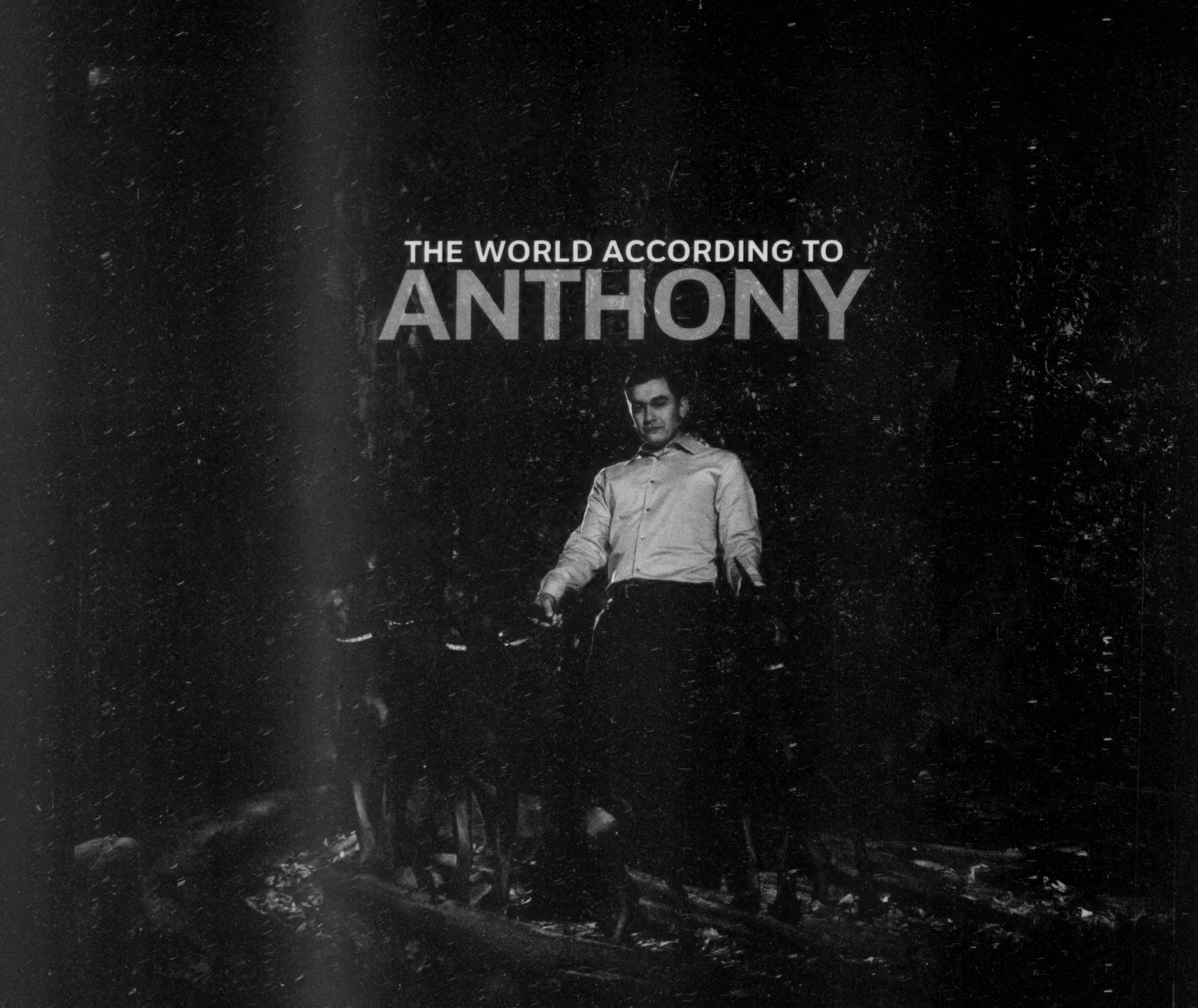

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Hyperion CEO Stresses Conservative Growth Goals

Sullivan offers views on corporate governance, global software development, H-1B visa law

BY DON TENNANT
LAS VEGAS

Godfrey Sullivan *is approaching his two-year anniversary as CEO of Hyperion Solutions Corp. following a three-year stint as the company's president and chief operating officer. In an interview with* Computerworld *during Hyperion's Solutions 2006 user and partner conference here last week, Sullivan talked about a range of issues, including his take on corporate governance and the H-1B visa controversy.*

When you took over as CEO, Hyperion separated that position from the chairman's post, which your predecessor, Jeffrey Rodek, said is a preferable governance model. How's it working? More and more companies are starting to separate the chairman and CEO roles. From a governance standpoint, it's a pretty good separation. It lessens the chance for the CEO to have the board in his pocket.

From a governance perspective, what's your assessment of former CA Chairman and CEO Sanjay Kumar's decision to plead guilty to the financial fraud charges he had been facing? I haven't followed that case so closely, but I'll tell you that the interchange I have with our auditors is quite simple. I believe that if you set conservative guidance and you follow that, you'll keep people inbounds. When you set growth targets that are too aggressive for your business, you force people out onto the ethical edge. The No. 1 thing a CEO can do to maintain ethical guardrails is to set conservative guidance and exceed it.

What is Hyperion doing in terms of global software development? We have about 100 people in Minsk that came to us through the Brio acquisition; we have big development centers in [Connecticut] and California, and we have another in Bangalore. For about two years now, we've done follow-the-sun programming. It has absolutely changed the way we build.

What's your position on the H-1B visa issue? It's hard to separate H-1B from the geopolitical issues. From a geopolitical standpoint, we're cutting off our nose to spite our face in terms of having security constraints around students who want to come study here. From an H-1B standpoint, we can always use more technical talent. We ought to be letting more H-1Bs through.

What's your response to unemployed U.S. IT professionals who feel that H-1B workers are stealing U.S. jobs? There's no simple answer. It's hard to connect the dots between the high demand for great technical people and the unemployed IT professionals. It's a complete mystery to me.

Can you comment on reports that Hyperion has had cash-flow issues stemming from problems with a new Oracle billing system? That's true. We implemented a new billing system [during the quarter that ended last December]. We did not do the best job in implementing that system and getting ready to go live with it. As a result, we didn't get a lot of our bills out on time. We were back up to normal levels of cash flow [in the quarter that ended in March]. ▶

Open-source Group to Create Online Forum for Corporate Users

BY TODD R. WEISS
NEW YORK

Open-source software is everywhere. But how does a large company — from its executive team down to its IT staff — figure out which open-source applications are right for its users and won't endanger the core business?

The Business Readiness Rating (BRR) open-source group says a little corporate social networking can provide information to help large companies start such projects.

OpenBRR.org was established last August by the Carnegie Mellon West Center for Open Source Investigation, O'Reilly Media Inc., SpikeSource Inc. and Intel Corp. to create a standard model for rating the readiness of open-source software for corporate projects.

During the Linux/Open Source on Wall Street Show & Conference here last week, the group unveiled plans to create a corporate online community for IT staffers from about 40 companies to discuss open-source issues.

The idea, said Murugan Pal, co-founder of BRR and founder and chief technology officer of SpikeSource in Redwood City, Calif., is to provide IT managers with information that can help them start open-source projects.

The BRR group plans to hold invitation-only forums within its online community that can be closely guarded to maintain security and confidentiality, Pal said.

There are already code collaboration initiatives for developers in the open-source community, he acknowledged, but "this is information collaboration for enterprises."

"We have been talking with CIOs for almost four years," Pal said. "They've been saying that they don't have places to get information on open-source."

"You're looking for that level of information that you can use to make a valid business decision," said George Pace, a systems architect at Prudential Financial Inc. in Newark, N.J. "It's like having a customer reference account for open-source."

Adam Braunstein, an analyst at Robert Frances Group Inc. in Westport, Conn., suggested that the new program may be more germane to IT professionals at small and midsize businesses. Most large companies are already involved in some open-source projects, so the ground-level questions have been answered, Braunstein said.

Big companies are "already there," he said. "It would be more useful for [small and midsize businesses] because they're not as aware of all this stuff." ▶

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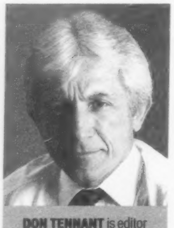
DON TENNANT

Checks and Balances

WHEN former CA Chairman and CEO Sanjay Kumar pleaded guilty last week to the charges of financial fraud and other offenses hanging over him, a lot of people were surprised. I wasn't one of them.

I had a feeling that Kumar would eventually plead guilty to the charges, despite his innocent plea in September 2004 following his indictment by a federal grand jury. In fact, I was almost certain of it.



DON TENNANT is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com**.

A couple of weeks after the indictment, I wrote an editorial in which I reminded readers that Kumar was innocent. My point was that he hadn't been found guilty of anything, which, under our legal system, means innocence. In that piece, I also recounted an anecdote about his mom that Kumar had shared with me a couple of years earlier. It had to do with some very wise guidance his mom had given him when he was a youth. Referring to that anecdote, I made this comment in the editorial:

"I have a hunch that his mom gave him some more sage advice when he was a kid: If you goof up, acknowledge it, make amends, be forgiven, and move on. If you didn't goof up, stand up for yourself."

It turns out that comment touched Kumar pretty deeply. I know, because he called me a couple of days later to tell me.

"I wanted to let you know that you were dead right about my mother," he said. "You captured her essence in that article, to the point where somebody actually shared it with my father. This moved him to the point where he called me last night. . . . I really appreciate it, because you really captured what she was all about, and what she passed on to me, in a very, very eloquent way."

It's also worth mentioning that Kumar never professed his innocence to me. He simply thanked me for what I had written and said he hoped we'd have a chance to sit down and talk about it all someday.

So no, I wasn't a bit surprised when Kumar acknowledged last week that he had messed up. In the end, he did what his mom, who passed away a couple of years ago, would have expected him to do.

I'm not making excuses for Kumar. What he did was wrong, and justice must prevail. But it's important to remember that decent people do stupid things. It would be tragic if the miracle Kumar worked at CA — transforming it from the most intensely feared and loathed software company on the planet to a respected and valued business partner — is forgotten because of all this. Vilification, in Kumar's case, is unwarranted.

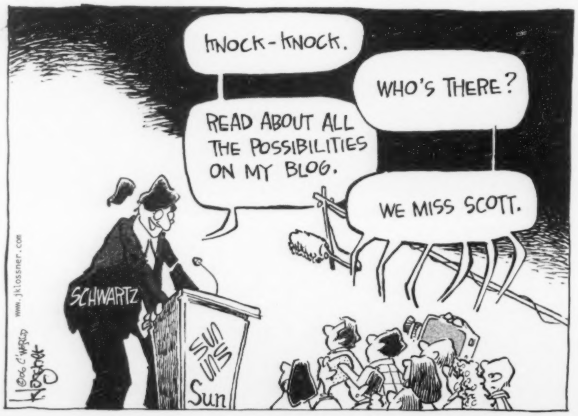
I was discussing Kumar's guilty plea last week with Hyperion CEO Godfrey Sullivan, who shared some interesting insights about the dilemma people face when expectations of them are set too high.

"When you set growth targets that are too aggressive for your business . . . you really force people out onto the ethical edge," Sullivan said. "They'll do whatever it takes to close a deal."

Perhaps Kumar had set his own bar too high, I don't know. I do know that companies need a firm set of checks and balances in place, which is something Hyperion considered two years ago when it decided that the roles of chairman and CEO should be held by separate individuals.

Maybe if that had been the case at CA during Kumar's tenure, as it is now, the trauma suffered by Kumar's family and his company — and the wrongs that precipitated it — could have been avoided. ▸

Don Tennant



MICHAEL H. HUGOS

A Week in The Life of Agile IT

OK, LISTEN UP, my Agility Corps friends. Here's the situation. Your company acquired a new operating unit and needs to provide systems for it to meet its business objectives. Headquarters sent out a bunch of analysts, but things got too complex. The fog closed in. It's past 90 days now, and all that's been produced are half-baked program code that crashes unexpectedly and looseleaf binders full of incoherent specifications. Your company needs to turn things around fast. Are you ready?

MICHAEL H. HUGOS is a CIO at large, author and speaker. He is also a member of the 2006 *Computerworld* Premier 100 IT Leaders class. His books include *Essentials of Supply Chain Management, 2nd Edition* and *Building the Real-Time Enterprise: An Executive Briefing* (both published by John Wiley & Sons). He can be reached at **mhugos@yahoo.com**.

Here's what we're going to do. We're going to send in a four-person agility team. Those four people need to be competent in all six core techniques and masters of some of them. The team leader has to be a master of joint application design (JAD) and process mapping. One team member needs to be a master of data modeling, and another a master of system prototyping.

We'll start bright and early on Monday. People at the operating unit have been told to expect you. They're angry and demoralized, so you need to get things in hand quickly. Upon arrival, the team will convene a JAD session. They need to calm people down and then agree on a one-week schedule to produce the conceptual designs, project plans and budgets for Version 1.0 of the systems they need.

Start by using process mapping to cut through the fog (see my last column, "Factoring Complexity," April 10). By the end of the first day, you will have a working set of process maps and have gotten started on the data model. In JAD sessions on Tuesday, the team will review and revise the process maps as needed and finish the data model. On Wednesday, the team

THE AGILITY CORPS:
What Michael Hugos calls IT-business operations experts who successfully apply combinations of six core techniques to deliver quick, 80% solutions to business problems (see "The Future Belongs to the Agile," March 13).

will work on its own to create conceptual designs for the needed systems.

You already know which company systems you can use. Identify those available at the new operating unit and create conceptual system designs to leverage what's already there. Add new packages or custom code only when necessary. Sketch out screen sequences to illustrate the user interfaces of these systems. Then draw the high-level technical architecture diagrams.

On Thursday, review these designs with people at the operating unit and adjust them as needed. The team leader is going to need real mastery of JAD technique to keep folks focused on the most important requirements. There is going to be serious pressure to expand scope. The fog will start to creep back in. Use the process maps, the data model and the conceptual designs to get and keep agreement on the most important systems functionality.

On Friday, put together a set of initial plans and budgets that shows how the first versions of these systems get built. Design systems that can be delivered within three months. We're looking for elegant simplicity. Identify and automate just the routine tasks and empower people, not computers, to handle the rest.

These will be long days. There will be moments when complexity threatens to overwhelm you. The agility team is going to get more done in a week than a bunch of plodding analysts got done in three months. But if you know your core techniques and stay calm, it's doable. Everyone who wants onto this team, step forward.

Some recruits pointed out that the equation in my last column was unsolvable and should have equaled something other than zero. I've just done my 50 pushups. ▸

V.P. KOCHIKAR

Act Before You Must

PROACTIVITY IS NOT a virtue that is evenly distributed among the members of the human race. IT managers, being human, are as fallible on this count as anyone else. Laying meticulous plans, spending hours developing elaborate lists of risks and negotiating every last detail upfront are things that don't come naturally to most of us.

V.P. KOCHIKAR is an associate vice president at Infosys Technologies Ltd., where he focuses on strategic foresight, technology risk management and intellectual capital management. The views expressed here are his own, not his employer's. He can be contacted at **kochikvp@infosys.com**.

After all, we need to believe that we succeed by virtue of smartness, innovativeness and flair, rather than painstaking and resolute groundwork. And in most companies, crisis management is seen as macho, and thinking on one's feet is admired. Action has romantic appeal; preparing for action doesn't.

But if you don't like surprises that come in the form of customer complaints and missed deadlines, you have to do some groundwork. Curtly telling your team "Make sure there are no surprises" is easy. It's more difficult to ensure that the folks reporting to you understand that springing nasty surprises is unfair to the customer.

You have to put mechanisms in place to ensure that there are no surprises. Considerable organizational wherewithal exists to forestall surprises in application development. The Capability Maturity Model, the V Model and, indeed, a large proportion of development methodologies and quality frameworks have at their core the principle that an ounce of prevention is better than a pound of cure. If uncertainty or risk is high, iterative software-development methodologies are available.

Of course, these frameworks and methodologies are often mandated within the organization. When that's the case, it doesn't take much proactivity to follow them. The true test of a mature manager is to go beyond minimal adherence to those elements of the framework against which you will be evaluated — to truly understand the intent behind the framework, and then to be proactive in upholding that intent.

The way we reward and recognize staffers can be critical in delivering the message that planning and foresight are important tools in ensuring that no surprises crop up. When you single out the most capable among those reporting to you, look for people who exhibit the following behaviors:

- ■ They start each task by consulting available organizational repositories (formal and informal), so they can build on the experience of others.
- ■ They build detailed lists of risks and contingency plans.
- ■ They adhere to templates and processes in spirit and not just in letter.
- ■ They maintain their own checklists and guidelines for every activity and contribute these to the organizational repository.
- ■ They learn from failures so that a mistake is never repeated.
- ■ They create and nurture listening mechanisms that give advance indication of what customers, vendors, competitors and employees are thinking — in short, an early warning system.
- ■ They set quantitative targets for cost, effort and quality and always know where they stand on those targets.
- ■ They don't accept a progress report at face value but can delve into its content by asking the right questions — that is, they realize that coding is "90% complete half the time."
- ■ They mentor their teams and serve as positive examples.

A tongue-in-cheek corollary to Murphy's Law states: "There's never time to do it right, but there's always time to do it over." Which would you rather spend your time on — doing it right, or doing it over? ▸

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READERS' LETTERS

E-bills Will Become The Norm in Time

I AGREE WITH Barbara Gomolski's main points in her article "Automated Billing: Have We Gone Too Far?" [March 20]. As time goes on, more and more companies are pushing their customer base to move to e-delivery of their billing statements.

I find it disingenuous that they tell us that they are asking us to move to paperless bills from some sense of ecological responsibility – unless of course, money really does grow on trees. Fact is, they save oodles of dollars by not sending out paper bills.

But here is something that I believe Gomolski may have missed: As we move toward e-bills by the tens of thousands, the rest of the folks that either cannot or will not move to e-bills will find that it is costing them more to receive paper. Why? With fewer people getting the paper bills, the cost per mailing increases.

Ray Negrón
Service manager,
Wellington, Fla.

Rigorous Oversight From U.S. Gov't?

I WONDER IF I am the only reader who saw the irony in Don Tennant's editorial "Filling a Void" [April 3]. Tennant states that "the U.S. government's well-established, rigorous security certification process would have uncovered the dastardly deed" if Lenovo's contract with the U.S. State Department were to be a means for China to spy on the State Department.

A mere seven pages earlier in the same issue are the following headlines: "State Workers Warned of Florida Data Leak," and "IRS Still Puts Taxpayer Data at Risk, Says GAO."

I had to laugh at Tennant's comments, considering all of the information that *Computerworld* has provided regarding the poor state of our government's IT departments. Don't be too sure that Uncle Sam doesn't have his password written on a Post-it note stuck to his monitor.

Gary S. Netherton
Senior design engineer,
Dayton, Ohio

No Zero-Sum Game

READING THROUGH Michael H. Hugos' April 10 column in *Computerworld* on "Factoring Complexity," I was surprised to find that his easily factored problem was more complex than he thought. In fact, his problem is so complex that it is unsolvable. Although we all learned early on that division by zero is not possible, we often forget this rule in performing algebra. Setting the equation to any number other than zero would work.

Do note that even with this simplification, one must take care in solving for *x* and *y*. Just plugging random values in for *x* can lead to *y* being an imaginary number. Perhaps you are OK with imaginary answers to your equation, but I don't think you want an imaginary solution to your business problem.

Nic Stevens
Corvallis, Ore.

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TECHNOLOGY

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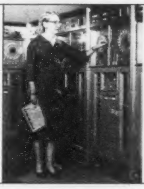
FUTURE WATCH
Computer Science Looks for a Remake
Six computer science professors discuss how IT can regain its appeal as a career choice, how college computer science programs can sharpen their focus on users of technology and what will happen when Moore's Law no longer applies. **PAGE 26**

Geek's Garden
On this week's stroll through the technology landscape, we stop to consider avian flu, single-molecule electronics and the origins of compilers — including the role Grace Hopper played while working on an early Univac. **PAGE 30**

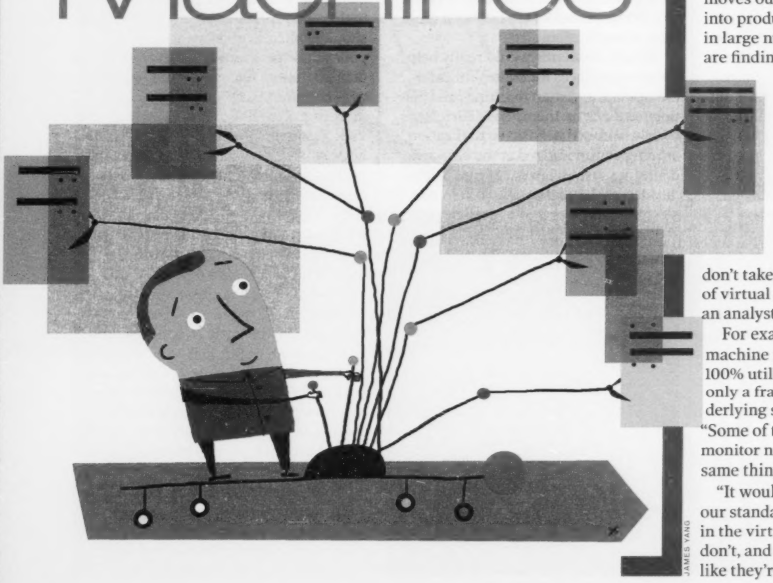
SECURITY MANAGER'S JOURNAL
Of Laptops, Caffeine, Nicotine and Chocolate
Laptop security concerns give C.J. Kelly a headache that a regimen of M&Ms, lattes, allergy medicine and even nicotine can't cure. **PAGE 32**



Getting A Grip on Virtual Machines

As **virtual machines** enter the enterprise in **increasing numbers,** administrators face a different set of **management challenges.**

By Robert L. Mitchell



JAMES YANG

IT STARTED OUT as a way to save money when Gannett Co. was adding new servers back in 2002. Now, says Eric Kuzmack, IT architect at the McLean, Va.-based newspaper publisher, "we have a couple hundred virtual machines in our data center." Virtualization technology has increased IT staff efficiency by allowing virtual servers to be deployed in days instead of the weeks required to provision physical machines.

But as virtual machine technology moves out of development labs and into production server environments in large numbers, some administrators are finding that the growth of virtual servers is getting ahead of the tools available to effectively manage them.

Existing server-monitoring tools are increasingly aware of virtual servers, but most aren't yet sophisticated enough to interpret feedback in a virtual machine context — much less act on it. "They don't take into account the particulars of virtual machines," says Frank Gillett, an analyst at Forrester Research Inc.

For example, a virtual machine may be running at 100% utilization but using only a fraction of the underlying server's resources. "Some of the things you monitor no longer mean the same thing," Kuzmack says.

"It would be nice if all of our standard tools worked in the virtual space, but they don't, and it doesn't look like they're going to anytime soon," says Norm Fjeldheim, CIO at Qualcomm Inc. in San Diego. He is evaluating tools targeted at virtual machine management to fill the gap.

For many organizations, identifying the root cause of virtual server problems and rectifying them remains largely a manual process. As the number of virtual machines in the data center increases, solving those problems in an automated way becomes more urgent.

Performance monitoring is just one aspect of virtual machine management. Other tasks include optimizing the mix of virtual machines that should reside on each physical server to achieve the best possible performance; automating virtual machine provisioning, load balancing, patch management, configuration management and fail-over; and enabling policy-based orchestration to automatically trigger the appropriate responses to events.

For some functions, such as patch management, existing tools work fine, says Paul Poppleton, a senior staff engineer at Qualcomm. In other areas, he says, "we're getting the best wins on the tools that take into account the fact that systems are virtualized."

Even organizations just starting virtual server projects can quickly run into management challenges. Once the decision is made to introduce virtual servers, the numbers can increase much more rapidly than expected because it becomes easier to procure new servers, says Poppleton. "Tack on 20% or 30% to what you planned on for growth, because it can really take off on you," he warns. Qualcomm has 1,280 VMware ESX Server virtual machines companywide

How Much For That Virtual Machine?

Tools that automate the process of tracking virtual machine utilization for chargebacks aren't available – yet.

computerworld.com/thisweek

Real Self-service For Virtual Provisioning

VIRTUALIZATION TECHNOLOGY may make provisioning of individual servers faster and easier, but the process can still take up increasing amounts of administrators' time as the number of requests increases. The most demanding groups tend to be development teams, which routinely build and tear down virtual machines as testing platforms.

"We were getting a lot of requests from developers to spin up these machines in ESX Server," says Stewart Hubbard, director of IT engineering at clothing retailer Coldwater Creek. The developers didn't like to wait, but giving them access to the production interface, VMware's VirtualCenter, wasn't feasible. So Hubbard is rolling out Slingshot, a self-service provisioning tool from Akimbi in San Mateo, Calif., that lets developers provision and deprovision their own virtual machines.

Akimbi is one of several vendors offering such tools. Others include Surgient Inc., Enigmatec Corp. and Platform Computing.

Developers at Coldwater Creek choose from a library of virtual machine images. Predefined amounts of virtual machine resources are allocated to individuals or groups. Hubbard says the developers can provision the resources they need when they need them and then release them when they're done. "There aren't [idle] resources running all of the time," he says. In addition, Slingshot can provision virtual environments for multitiered applications and group together virtual servers into a single, integrated environment.

The arrangement is a win-win setup for IT and the end users. Administrators retain control over resource use, while developers get the resources they need without going through red tape. "We want to segment the developers from production but still give them the ability to work as quickly as they need to," Hubbard says.

– ROBERT L. MITCHELL

that run a mix of Windows and Linux. About 850 virtual machines are running in Qualcomm's data center, with each physical server hosting an average of 10 virtual machines.

Even fine-tuning the performance for as few as 10 virtual machines can be a challenge. "One place where we've had trouble is trying to manage the resources on a single physical host," says Poppleton. VMware Inc.'s VirtualCenter 2 management software, which Qualcomm is beta-testing, should help with that, he says. The software is expected to ship in the first half of this year.

Finding the Right Tool

Kuzmack is also beta-testing VirtualCenter 2. One component, Data Resource Scheduler, aggregates servers into pools that can be assigned to groups and managed through policies that the administrator creates. "We can take a group of physical servers and carve them up into resource pools where we can set high-level and low-level limits and resource guarantees," he says. Another feature, Distributed Availability Service, automatically moves virtual machines to a new physical server and restarts them after a physical server fails.

Kuzmack is also working on basic monitoring. He wants to integrate VMware's VirtualCenter control software with Gannett's Microsoft Operations Manager (MOM) software. Other than basic performance metrics, "we haven't determined what we want to expose to the MOM console yet," he says.

Jim Ni, senior technical product manager at Microsoft Corp., says the company is working on adding more virtual machine management capabilities to its management tools, but it's not there quite yet. For example, Systems Management Server can manage physical machine image libraries but can't differentiate between an image for a physical machine and a virtual machine image.

Poppleton is using VirtualCenter but says he also needs more cross-platform tools. "Right now, we're a VMware shop, but in the future that may not be true," he says. He's considering using VirtualIQ, a virtual machine management tool suite being developed by ToutVirtual Inc. in Carlsbad, Calif. It supports automated provisioning, capacity management and security.

He's also looking at tools for "grid-style management of physical and virtual systems," such as VM Orchestrator from Platform Computing Inc. in Markham, Ontario. VMO optimizes capacity by dynamically allocating and controlling virtual machine resources and utilization levels based on user-defined policies.

Both ToutVirtual and Platform Computing currently support VMware, but both have also announced plans to support Microsoft Virtual Server and the open-source Xen virtual machine monitor. In the interim, Poppleton's staff has had to develop some of its own tools.

"We're in the first phases of automated provisioning," he says, adding that Qualcomm wrote its own utilities because it couldn't find a tool that met all its needs.

Christopher Ware, assistant vice president of technology services at a Wall Street brokerage house, recently deployed BMC Virtualizer, an orchestration and provisioning tool that's part of a suite of virtual machine management tools from Houston-based BMC Software Inc. "It gives us policy-driven responses to resource utilization issues," he says. The tool also can support virtual machines created with Xen, VMware and Virtual Iron, all of which are running at the brokerage.

Like other cross-platform tools, Virtualizer integrates with APIs from VMware and other virtual machine software to automate the execution of those proprietary tools. For example, Virtualizer supports the automated movement of virtual machines between physical servers in VMware environments using VMotion.

Ware, whose company prefers to remain anonymous, says that getting BMC Virtualizer to work with all of his virtual machines wasn't exactly a plug-and-play experience — especially since no common standards exist. In his environment, "there was a significant amount of coding and customization required to do a lot of the virtual provisioning," he says, and that accounted for the bulk of the deployment costs. A BMC spokesman says the product works out of the box with more than 50 applications.

"Where standards would really help is these interfaces for controlling and manipulating virtual machines and getting feedback on them," says Forrester's Gillett, noting that basic virtualization is being commoditized at the chip and operating system levels. VMware, Xen developers, Intel Corp. and others are discussing the need for higher-level standards but have yet to reach a consensus.

Virtual Machines On the March

26% of organizations have implemented virtual machine technology.

8% are piloting virtualization.

60% of those using virtualization plan to increase use of the technology in the next 12 months.

Base: 1,221 organizations with 1,000 employees or more

SOURCE: FEB. 22, 2006, FORRESTER TRENDS "SERVER VIRTUALIZATION GOES MAINSTREAM" SURVEY, FORRESTER RESEARCH INC., CAMBRIDGE, MASS.

> You need **something** that manages the virtual and the physical **together**.
>
> **Frank Gillett,** ANALYST, FORRESTER RESEARCH INC.

Stewart Hubbard, director of IT engineering at Coldwater Creek Inc., a clothing retailer in Sandpoint, Idaho, has about 60 production servers running in ESX Server virtual machines. He says resource allocation is a big issue.

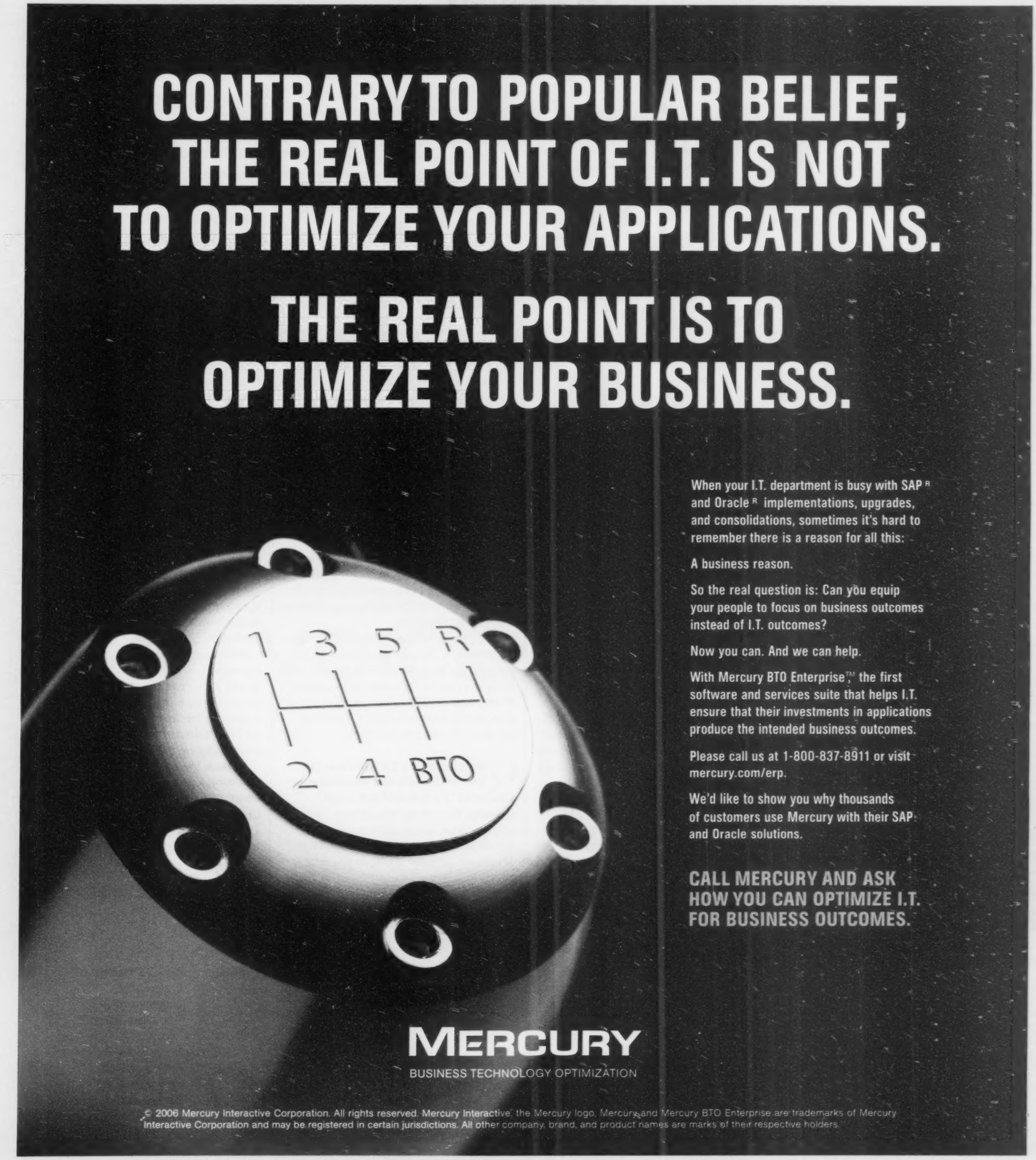
"When a particular machine starts to get hammered and the resources aren't available, you'll see a noticeable dip, and the end users will notice it," he says. Right now, he uses VirtualCenter to address the issues, one machine at a time. And because not all application vendors support their software running in virtual machines, he uses a tool from PlateSpin Ltd. to migrate virtual machines back onto physical servers for technical support purposes.

While virtualization-specific management tools are a good option today, ultimately, "you need something that manages the virtual and the physical together," says Gillett. BladeLogic Inc., which offers a virtualization-aware configuration life-cycle management tool, contends that a single set of policies should control both worlds. Once the policy and "personality" of a server are defined, "every instance of the server, whether physical or virtual, is treated more as a compliance exercise," says Vick Vaishnavi, director of product marketing at BladeLogic in Waltham, Mass.

Qualcomm's Fjeldheim says he sees no reason to wait for all the pieces of the management puzzle to come together. Integrated tools would be nice to have, but "we're happy to use the tools that are specific to the virtual environment. It's not that big a deal," he says.

Today, it's the early adopters in industries such as financial services that are encountering management issues with what vendors like to call "virtual machine sprawl," but the pain will spread as more companies ramp up the number of virtual servers in use between now and next year, analysts say.

"Implementing this stuff is the beginning of rethinking how you manage your IT infrastructure," says Gillett. "You won't get far without thinking about data center automation." ◗



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Computer Science Looks for A Remake

How can CS become an appealing career choice again? Robot dogs, a new focus on users and a prime-time TV show. By Gary Anthes

FUTURE WATCH

Two of the world's premier facilities for research and education in computer science are celebrating big birthdays this spring. Stanford University's CS department observed its 40th birthday in March, and Carnegie Mellon University's school of CS passed the half-century mark last month.

Despite the celebrations on both campuses, there is a deep malaise in computer science these days. Professors bemoan falling enrollments, a decline in prestige and a lack of attention to real-world problems. But, paradoxically, they say the future of CS has never been brighter, both within the discipline and in fields that computer technology will increasingly influence. Computerworld*'s Gary Anthes recently asked six CS professors what lies ahead for the field.*

Q How important is computer science as a discipline today?

Birman: The importance of CS has never been greater. We're discovering ways to build just about everything out of small, simple mechanisms glued together with software, so no matter what you do, CS tends to be inside. And the scope of this new CS is amazing: We're at the center of the action in biology, nanotechnology, particle physics. If society is ever going to slash medical costs, CS will play the key role. I see CS as a sort of universal science. We're beginning to pervade everything.

Chazelle: CS is the new "new math," and people are beginning to realize that. CS, like math, is unique in the sense that many other disciplines will have to adopt that way of thinking. It offers a sort of conceptual framework for other disciplines, and that's fairly new.

Carbonell: There are many more innovations in the works — reliable speech understanding, high-quality machine translation, lightweight, high-capacity e-books, theft-proof electronic wallets and so on. These innovations often require better tools, extended programming languages and even new processor architectures.

And we must see if other models of computing could surpass the tried and true. Nanotechnology and quantum computing could well be fundamental ingredients in the next revolution in computing. Massively parallel computation based on swarms of conventional chips underlies another potential revolution.

Canny: Computers aren't very valuable yet, because the applications they perform are still elementary and routine. It's actually remarkable how much we spend on IT, considering how little it does. The most widespread applications are still e-mail and Microsoft Office. That should tell us something.

What we really need to be thinking about is what people are doing with computers and how we could help them to do those things much better. Since most people are doing knowledge tasks, that means machines understanding their owners' work processes much more deeply, finding semantically appropriate resources with or without being asked, critiquing choices and suggesting better ones, and tracking synergies with other groups within a large organization.

Computers will leverage the human resources in the company more at a knowledge level. They will directly tie what they do to the creative processes of employees. The economic impact of that would be much bigger than anything we have seen so far.

Q Which areas in CS will show the most important and interesting advancements in the next few years?

Chazelle: Definitely algorithms. What are the most amazing technological breakthroughs in recent years? TCP/IP, whole-genome shotgun sequencing, Google, quantum factoring — all of them algorithms. We're in for huge surprises.

> **We've had a fun childhood without many cares, but now we're grown, and we have to figure out what we can do for the world that really matters.**
>
> **JOHN CANNY,** UNIVERSITY OF CALIFORNIA, BERKELEY

Bryant: A recent big growth area in computing has been in using statistical methods to process vast quantities of data. Google is a prime example of that: They can return a query to you in a few seconds based on the contents of the entire [Web]. How do they do it? By maintaining massive data repositories that allow thousands of processors to operate on terabytes of data.

This data-centric style of computing will drive many future efforts in natural-language translation and understanding, astronomy and even epidemiology.

For example, we have a project that provides early detection of public health concerns by monitoring the sales of cough and cold remedies at regional pharmacies — giving a heads-up before doctors start seeing disease trends among their patients.

Birman: I'm convinced that we're reaching a point where trustworthy computing will finally overcome its historical market-failure problems and become a commonplace requirement. And I see massive databases as

Continued on page 28

The Faculty

Kenneth P. Birman, professor of computer science, Cornell University

John Canny, chairman of the electrical engineering and computer science department, University of California, Berkeley

Bernard Chazelle, professor of computer science, Princeton University

Randal E. Bryant, dean of the school of computer science, Carnegie Mellon University

Jaime Carbonell, director of the Language Technologies Institute, Carnegie Mellon University

William J. Dally, chairman of the department of computer science, Stanford University

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Continued from page 26

a huge area and opportunity, particularly when the data is intrinsically distributed.

Web services will be the next interoperability standard, engulfing CORBA but going further. The world is going to become interoperable, and this leads to large-scale, distributed, service-oriented architectures. There's a lot of research to do, but this is going to be a phenomenally large thing, much larger than the original Web revolution.

Carbonell: Artificial intelligence. Although those words may be somewhat out of fashion these days, much of the deep excitement and universally useful apps descend therefrom. For example: speech understanding and synthesis in handheld devices, in cars, in laptops; machine translation of text and spoken language; new search engines that find what you want, not just Web pages that contain query words; self-healing software, including adaptive networks that reconfigure for reliability; robotics for mine safety, planetary exploration; prosthetics for medical/nursing care and manufacturing; game theory for electronic commerce, auctions and their design to ensure fairness and market liquidity and maximize aggregate social wealth.

Q **Is the looming end of Moore's Law a key driver for CS today?**

Birman: Not in my view. My machine is fast enough. Trustworthy computing is a much more urgent issue. After all, if we move all these critical systems to computer networks and don't solve the trust issue, we'll be cooked, and faster machines are really not going impact that issue one iota.

Chazelle: We're at the tail end of Moore's Law. Because of power-dissipation issues, the party's essentially over. Back to parallel architectures. Huge work ahead.

But this will be the best thing that can happen to CS. Moore's Law has been tremendously beneficial to society. At the same time, it's been so damn powerful that it has set back the development of algorithms. But that's about to change. Any student interested in science and technology needs to learn to think algorithmically. That's the next big thing.

Dally: The current road maps show [Moore's Law] continuing for at least another 15 years. Even after that point, it will take many years for information systems to fully exploit the densest semiconductor devices. One can also expect that other technologies may emerge to continue scaling — perhaps in a different way.

Canny: We're still stuck in the paradigm of "more cycles, more value." Now is the time to really start looking around.

The market for computing has changed radically and irreversibly. What really matters is how useful our artifacts are to the people who are buying them. We don't know these people anymore, and we don't care much what they're doing with IT. That has to change. We're at an economic cusp right now. Sales have slowed, jobs have slowed, enrollments have slowed. It's not a technical problem; it's a problem of creating value. Every mature industry has to face that eventually. We've had a fun childhood without many cares, but now we're grown, and we have to figure out what we can do for the world that really matters.

Q **How can CS be made a more attractive choice for students?**

Bryant: We should stop scaring them away. Predicting that all IT jobs will move offshore could become self-fulfilling. New jobs are growing faster than old jobs are moving offshore, and that trend will continue. We need to stop putting them to sleep. Students who take computer science classes in high school are taught how to write programs in Java, and their assignments have them writing code that does tedious things like sort lists of numbers. They do not learn about any of the big ideas of computer science.

Chazelle: I roll my eyes when I hear students say, "CS is boring, so I'll go into finance." Do they know how dull it is to spend all-nighters running the numbers for a merger-and-acquisition deal? No.

People have run away from CS because they are worried about outsourcing. This is a valid concern that can't be waved away by simply repeating the mantra that CS is cool.

Dally: We need to clear up many misconceptions about the field. Prospective students should understand that there are plenty of CS jobs in the U.S. and they pay well, that most CS jobs involve working with teams of people and place a premium on communication skills and teamwork — it's not just a bunch of nerds working individually at terminals — and that CS is so central to so many aspects of our economy that a CS education is good preparation for many careers.

Canny: We're losing in quality — principally to bioengineering, which is now the best students' top choice — and diversity. It's a problem of social relevance. Minorities and women moved fastest into areas such as law and medicine that have obvious and compelling social impact. We've never cared much about social impact in CS.

Looking for Answers

Carnegie Mellon's Randal Bryant says there are many questions he'd like computer science to tackle more effectively, including these:

- **Why do spam and phishing attacks constitute 50% of my e-mail despite multiple levels of filtering?**
- **Why does my laptop weigh 5 lbs. and not have enough battery life to get me through a cross-country trip?**
- **How come I need to download patches from Microsoft every two weeks to fix problems with buggy software?**
- **Why do I have to print out documents to avoid hurting my eyes reading them on my screen?**
- **Why can't I search my digital photo collection for images of my dog catching a ball?**
- **Shouldn't people be able to set up ad hoc networks safely and easily?**
- **Why can't a computer drive a car? Or a wheelchair?**
- **Why can't computer programs translate documents from one language to another with the same quality as a professional translator?**

Q **How should CS programs be modernized?**

Chazelle: Much of the curriculum is antiquated. Why are we still demanding fluency in assembly language today for our CS majors? Some curricula seem built almost entirely around the mastery of Java. This is criminal.

The curriculum is changing to fulfill the true promise of CS, which is to provide a conceptual framework for other fields. Students need to understand there's more, vastly more, to CS than writing the next version of Windows. For example, at Princeton, we have people who major in CS because they want to do life sciences or policy work related to security, or even high-tech music. In all three cases, we offer tracks that allow them to acquire the technical background to make them intellectually equipped to pursue these cross-disciplinary activities at the highest level.

Birman: We need to realize that we're losing a lot of students around Grade 10. So we need to revamp the way CS is taught in high school to focus much less on programming and much more on problem-solving and puzzles. Kids also need to work with things that are fun — robot dogs that follow their owner around and growl at people who are wearing pink socks — and do much less coding. Kids need to be grappling with information management issues, like the challenges of securely managing medical records and the legal and ethical issues that arise if we put monitoring systems in homes to keep an eye on the elderly, or in cars to provide emergency services.

Q **Bernard Chazelle says CS lacks a "great popularizer" such as Stephen Hawking in physics. Does CS need such a person?**

Birman: I tend to view Bill Gates as our most public advocate, but I agree with Chazelle about this. We need a guy like Oliver Sacks or Carl Sagan, and the field doesn't have anyone in this role.

Canny: To be brutally realistic, I think that CS as it's constructed today isn't as exciting as other sciences. It's necessarily a handmaiden, and other scientists see it as such. But Nicholas Negroponte [co-founder of the MIT Media Lab] is almost surely as charismatic and media-savvy as anyone in physics.

Dally: I would say that CS needs a serious public relations effort. A prime-time TV show, *Silicon Valley Software*, could also do a lot of good, if done right, to show people what computing careers are really about and to clear up many misconceptions about the field.

Carbonell: CS needs a great communicator who lives the excitement, is deeply respected by his or her peers, and can reach out and communicate clearly with any educated person via his books. We have no such person in CS. Perhaps Raj Reddy [a Carnegie Mellon computer science professor] has the right kind of talents.

Bryant: For years, we didn't have to worry about our public image. Students clamored to get involved with computers, and government agencies were generous with their funding. We need a Stephen Hawking, a Carl Sagan or a Richard Feynmann, but I have no idea who that would be. ◗

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Supercomputer Suggests Avian Flu Strategy

Simulation of Day 90 of an avian flu pandemic, with blue indicating one person or fewer infected per 1,000 persons, green indicating 50 infected per 1,000 and red indicating 100 or more cases per 1,000 persons.

USING SUPERCOMPUTERS to respond to a potential national health emergency, scientists have developed a model that makes stark predictions about the possible course of an avian influenza pandemic.

The large-scale, stochastic simulation model examines the nationwide spread of a virus strain, such as an evolved avian H5N1 virus, should it become transmissible human-to-human. The simulation rolls out a city- and census-tract-level picture of the spread of infection through a synthetic population of 281 million people over the course of 180 days, and it examines the effects of interventions such as antiviral therapy, school closures and travel restrictions as vaccine developers struggle to catch up with the evolving virus.

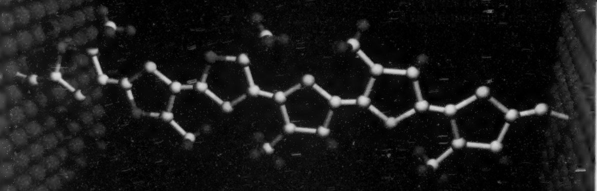
The model indicates that the best strategy for mitigating a pandemic would involve stockpiling a large supply of vaccine containing potential bird-flu antigens and developing the capacity to rapidly make a better-matched vaccine based on human strains, say scientists Timothy Germann, Kai Kadau and Catherine Macken of Los Alamos National Laboratory and Ira Longini of the University of Washington and the Fred Hutchinson Cancer Research Center in Seattle. Their research is presented in the April 11 issue of *Proceedings of the National Academy of Sciences*.

The results show that advance preparation of a modestly effective vaccine in large quantities appears to be preferable to waiting for the development of a well-matched vaccine.

The computer simulation models a synthetic population that matches U.S. census demographics and worker-mobility data. It uses U.S. Department of Transportation travel data to model long-distance trips in an attempt to realistically capture the spread of the pandemic virus by airplane and other modes of cross-country travel.

The model of disease transmission involves probabilities that any two people in a community will meet on any given day in any one of a number of settings, such as a home or workplace. Thus, simulated disease transmission is more likely for two people in the same household and less likely for two people who have less in common. Other elements of randomness modify the simulated disease course. A significant fraction of infected people (33% in the present model) never develop clinical symptoms, although they are themselves infectious. In addition, the durations of the incubation and infectious periods can vary and are randomly chosen for each individual.

The pandemic simulation model has been implemented in Los Alamos' celebrated Scalable Parallel Short-range Molecular dynamics (Spasm) large-scale simulation platform, which was developed for the nuclear weapons program. It runs on the supercomputer known as Pink, a 1,024-node (2,048-processor) LinuxBIOS/BProc Science Appliance running Clustermatic 3, the largest single-system image Linux cluster in the world. ◗



TRENT SCHINDLER, NATIONAL SCIENCE FOUNDATION

GROVES OF ACADEME

Single-Molecule Diodes Could Extend Moore's Law

USING THE POWER of modern computing combined with innovative theoretical tools, an international team of researchers has determined how a one-way electrical valve, or diode, made of only a single molecule does its job.

Diodes are critical components within computers, audio equipment and countless other electronic devices. If designers can swap existing diodes with the single-molecule variety, the products could be shrunk to incredibly small sizes.

The technology may allow computer designers to sustain Moore's Law – Intel Corp. co-founder Gordon Moore's prediction that computing advances will allow a doubling every 18 months in the number of transistors that can fit on a silicon chip. First put forward by Moore in 1965, the "law" has been nearing the end of its useful life as ever-shrinking chips approach their physical limits.

Created by a research team at the University of Chicago, the single-molecule diode is merely a few tens of atoms in size and 1,000 times smaller than its conventional counterparts. Recently, theorists from the University of South Florida and the Russian Academy of Sciences have explained the principles that make the device work.

The researchers showed that electron energy levels in a molecule are efficient channels for transferring electrons from one electrode to another. Because the molecule in the diode is asymmetrical, the electronic response is also asymmetrical when voltage is applied. The asymmetry contributes to a phenomenon called molecular rectification: The channels conduct electrons in one direction but limit flow in the opposite direction when the voltage polarity reverses. That property makes the molecular diode a potential gatekeeper for circuits and a candidate to one day replace silicon in computer chips.

Researchers from all three institutions reported their findings in the March 10 issue of *Physical Review Letters*.

DIFFERENCE ENGINES

Bridging the Language Gap

EARLY COMPUTERS did not use compilers, which are programs that translate text written in one computer language (the source language) into another computer language (the target language). Those relatively primitive early machines had just a few operations codes and little memory, and users entered binary machine code directly by toggling switches on the computer console/front panel.

In the late 1940s, programmers found that machine code could be denoted using some mnemonics (assembly language) and computers could translate those mnemonics into machine code. The primitive compiler known as assembler emerged.

Grace Hopper and an early Univac.

U.S. Navy officer Grace Hopper is credited with doing much of the seminal work in the development of compilers when she worked on the Univac computer for Remington Rand Corp. in the early 1950s. She did this, she said, because she was lazy and hoped that "the programmer may return to being a mathematician." Her work embodied or foreshadowed enormous numbers of developments that are now the bones of digital computing: subroutines, formula translation, relative addressing, the linking loader, code optimization and even symbolic manipulation of the kind embodied in the Mathematica and Maple programming languages.

John Backus

The Fortran team at IBM, led by the programming language's inventor, John Backus, is generally credited as having introduced the first complete compiler, in 1957. Cobol was an early language to be compiled on multiple architectures, starting in 1960. Most of the principles of compiler design were developed during the 1960s.

With the evolution of programming languages and the increasing power of computers, compilers are becoming increasingly complex in order to bridge the gap between problem-solving modern programming languages and the various computer systems, aiming at getting the highest performance out of the target machines.

Because compilers translate source code into object code, which is unique for each type of computer, many compilers are available for the same language. For example, there is a Fortran compiler for PCs and another for Apple Computer Inc.'s Macintosh computers. In addition, the compiler industry is quite competitive, so there are actually many compilers for each language on each type of computer. More than a dozen companies develop and sell C compilers for PCs.

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Of Laptops, Caffeine, Nicotine and Chocolate

Laptop security concerns give our manager a headache she can't shake by any number of unhealthy means. By C.J. Kelly

I SAT AT my desk, staring at the whiteboard on the wall. I was plagued with security insecurities and a massive headache. My allergies were feeding the headache, but at the root was stress. I had a lot on my mind, including what to do about laptops.

When I'd woken up in the morning with the headache and all the signs of a major allergy attack, I'd first popped an allergy pill. Then I gulped down a huge mug of coffee as I started the drive to work. I still had the headache an hour later when I arrived. I next went for the headache pills and a huge latte. I added a healthy dose of nicotine into the mix just for good measure. Nothing seemed to be working, and now I was throwing handful after handful of M&Ms into my mouth.

I knew that trying to drown the headache in caffeine, nicotine and chocolate was probably the worst treatment method, but we don't always act rationally. I had a problem, no solution was coming to me, and I was feeling frustrated.

Laptops present a security dilemma. They are among the best productivity devices ever created, but they may also be the single largest security threat to corporate and government networks. Their utility means they aren't going away anytime soon, but their vulnerability means things can't continue as they are.

Like security managers everywhere, I read about incidents such as laptops that contain vital and sensitive information being stolen, and I shudder.

But I certainly appreciate the value of a laptop. Mine goes everywhere I go, and I connect it to a variety of networks wherever I am.

Security Willies

Lately, employees of the state agency I work for have been starting to tune in to how nice a laptop can be for getting work done while on the road.

But I have enough experience that this productivity enhancement gives me the security manager willies. When I worked in the private sector, we had a major security breach involving a remote laptop connected via a home DSL connection. A hacker had compromised the home network, gained administrative privileges and changed the password. He then achieved remote access through the VPN and tried to hack into a corporate database. It was then that we noticed we had an intruder.

SECURITY MANAGER'S JOURNAL

The laptop had been compromised through a known vulnerability. The machine had been in the field for a year without being properly patched and updated. Even though this happened years before such incidents had to be disclosed to consumers, it got upper management's attention.

> I know of only one company that manages wireless laptops in a truly secure fashion.

After long ignoring the screams and pleas of the security and IT teams for a way to secure and manage remote laptops, the company suddenly coughed up the funds to buy remote management software.

That was a step in the right direction, but the laptops that we allow staffers to check out when they travel can be used wirelessly through a broadband provider.

I know of only one company that manages wireless laptops in a truly secure fashion, and even it faltered at first.

A friend of mine works at a large telecommunications company. When it first enabled wireless connectivity on the sales force's computers, the salespeople couldn't use it to log into the corporate network. To do that, they had to revert to the old dial-up connection to a VPN.

For the security team, this was preferable because it was highly secure, using RSA Security Inc.'s SecurID technology. But for the sales force, the painfully slow dial-up connection discouraged any laptop use on the road.

Instead, they tended to work out of the local sales offices, where they could authenticate to the local network. The whole purpose of giving them laptops was lost. Eventually, the company started to provide secure broadband wireless connections for the sales force.

The cost, of course, is beyond what we can afford at this small state agency. As always, we have to figure out how to enable our workforce on a shoestring budget.

We have a technologically unsophisticated workforce to boot, so however we do this, it has to be simple. Our employees don't know the difference between one network and another. All they know is how to turn the laptop on, make sure the network cable or card is plugged in and log in.

The Dilemma

So, here I sit, pondering the dilemma. Between sips of latte and handfuls of M&Ms, I start to think out loud. We can start by building a secure laptop image that has all unnecessary services turned off. The image should include these features: a personal firewall that is set to automatically update over the Internet; antivirus software (that prohibits spyware, preferably) that's also set to automatically update; an up-to-date operating system and applications, set to automatically update; an alternative browser, such as Mozilla's Firefox; a disabled guest account; and a user account that has restricted permissions so that the user can't save anything to the hard drive or install any programs.

We could also supply a USB flash memory device for holding confidential data, which would have to be password-protected and encrypted, and a connection to the state network via a Cisco VPN client, with IPsec encryption.

We might want to allow all other network connections, including wireless, but I'll have to think about that one.

The only other thing I can think of to do is to train users in the secure methods of logging in remotely and safeguarding data and the equipment that holds data.

Even if we could make the laptops as secure as possible, we would still have to rely on the people who use them to safeguard them. I don't like that answer, but I'm afraid it's all we've got. ▸

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

HIPAA Security Compliance Up

According to a survey conducted by the American Health Information Management Association, compliance with the security rules of the Health Insurance Portability and Accountability Act is on the rise. Of 1,117 hospitals and health systems responding to this year's survey, 75% said they were at least 85% compliant with HIPAA's information security rules, up from 60% last year. But compliance with HIPAA's privacy rules declined.

Man Charged With Hacking Database

A 25-year-old network administrator in San Diego has been charged with hacking into a computer system at the University of Southern California and accessing confidential information submitted by more than 275,000 students applying to the school. Eric McCarty was named in a criminal complaint that charged him with knowingly transmitting a code or command to intentionally cause damage to USC's online application system.

Spam Case Settled

The Federal Trade Commission has settled with two Washington state residents who sent millions of unsolicited commercial e-mail messages in violation of the CAN-SPAM Act. Matthew Olson and Jennifer LeRoy sent spam with false "From" data and misleading subject lines; they also failed to provide a way for recipients to opt out of receiving future e-mails. Olson and LeRoy have agreed not to violate the law again. A suspended $45,000 judgment will be reinstated if evidence emerges indicating that they have misrepresented their financial condition.

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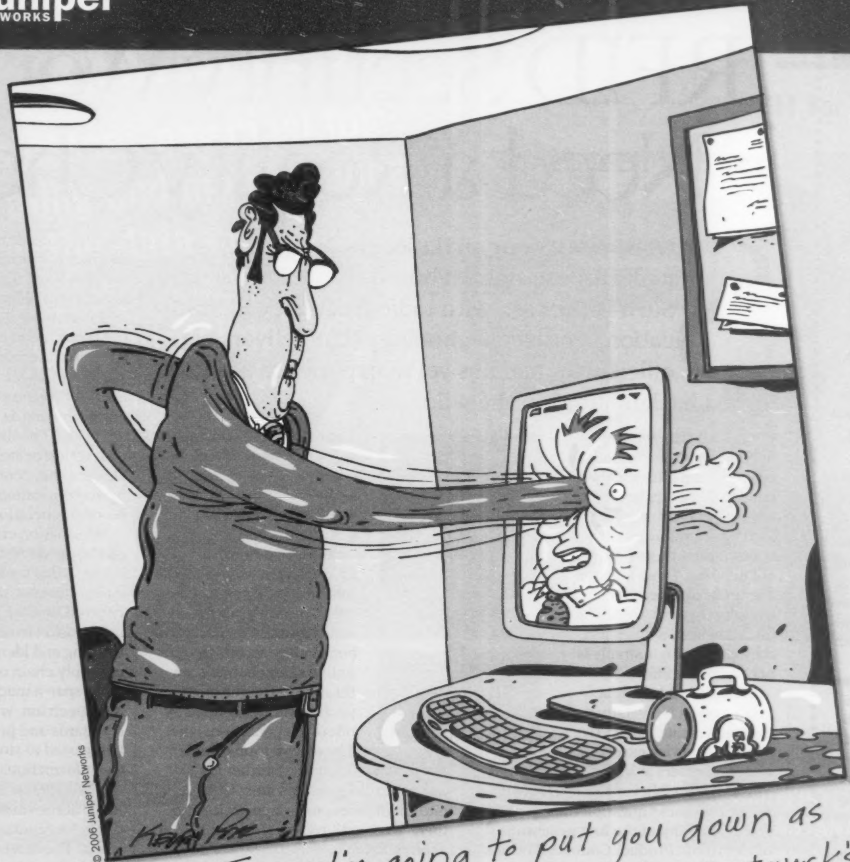

"Okay, Jerry, I'm going to put you down as a "NO", under "Happy with the network's current performance."

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BRIEFS

LogMeIn Offers PC Backup Service

■ LogMeIn Inc., a vendor of remote access products and services, has announced a new backup service that's designed to allow computer users to automatically back up files over a secure connection between any number of remote or local computers. The basic LogMeIn Backup network, which is available now, costs $6.95 per month and includes the software for two PCs, according to the Woburn, Mass.-based company.

Accsense Launches Sensor Pod Line

■ Accsense Inc. in Santa Barbara, Calif., has introduced a turnkey wireless sensor product. It's designed to measure a wide range of physical properties and makes real-time measurements available online for any computer or Web-enabled device, says the company. The Accsense product line includes wireless sensor pods that measure ambient temperature, humidity, light, noise and vibration. The pods, which are compatible with a range of standard external plug-in sensors and probes, range in price from $295 to $635, depending on the combination of measurements and inputs. The Accsense hosted online service is available on a monthly subscription basis.

Zmanda Rolls Out Open-source App

■ Zmanda Inc. has unveiled its first enterprise-class corporate data protection software. Amanda Enterprise Edition is a commercial-grade version of the widely used Amanda open-source backup and recovery software; it was built to address the requirements of corporate computing, with a focus on security and usability, according to the Sunnyvale, Calif.-based vendor. Available as part of a subscription to Zmanda Network – a suite of enterprise-ready software and services – Amanda Enterprise Edition ranges in price from $50 to $250 per protected system.

MARK WILLOUGHBY

RFID Security Worries Need a Reality Check

SOMETIMES our anxieties about security make us lose sight of how a technology is used. Such is the case with radio frequency identification, a proven technology that delivers big efficiencies and has yet to experience a confirmed hacker attack in the wild.

MARK WILLOUGHBY, CISSP, is a 20-year IT industry veteran and journalist. Contact him at **milloughby@earthlink.net**.

But RFID has seen many tightly controlled "proof-of-concept" exploits, widely publicized by academic researchers to showcase RFID vulnerabilities that in reality pose less risk than an old flu virus. Don't look for criminals to unleash these exploits anytime soon. They understand that what little they could gain is simply is not worth the effort.

In April, academics at Edith Cowan University in Australia created an RFID denial-of-service exploit, and researchers at Vrije Universiteit Amsterdam publicized an RFID virus. Those two hacks question the integrity and availability of the first generation of Electronic Product Code RFID chips from EPC Global (*www.epcglobalinc.org*), an industry standards body working to streamline and secure supply chains.

These proof-of-concept EPC RFID attacks could make the drying time of paint seem quick. Information criminals operating behind the virtual anonymity of the Internet have shown scant interest in supply chain applications. There are no bragging rights on hacker Web sites for exploits launched against physical goods. Confusing handlers of pallets loaded with dog food or diapers, or even diverting containers filled with toys or consumer electronics, gets you flamed as a bottom feeder in the information underworld.

Trafficking in hard goods traditionally has been blue-collar street crime, the stuff of film noir gangsters, crooked dockworkers and teamsters with ready distribution channels for stolen goods. The Internet's promise of disintermediation (*http://en.wikipedia.org/wiki/Disintermediation*) is simply not as appealing to the stolen-goods underworld as it is to legitimate distributors.

Stolen goods are not easily converted to cash on the Internet. Information criminals constantly try to sell stolen goods via hijacked or bogus eBay accounts, other online sales channels, or through networks of unsuspecting surfers conned by offers too good to be true. The distribution of stolen physical goods on the Internet is risky and costly because lots must be broken into small pieces to escape notice and there is an audit trail to threaten prized anonymity.

Information criminals steal information that's readily convertible to cash, not meaningless EPC RFID inventory data. The people who design EPC standards know far more about the risk to supply chains than cloistered academics engineering these meaningless proof-of-concept exploits.

The EPC initiative is backed by companies that suffer billions of dollars in global supply chain losses every year. They have performed a rigorous risk analysis and concluded that the effect of a supply chain exploit targeting EPC chips is relatively low. They also have determined that the probability of seeing a wave of hacks on EPC chips is similarly low.

The probability is even less with the second generation of EPC chips that is replacing the generation currently in mainstream usage. Second-generation EPC chips have stronger authentication, encryption and traceability, giving authorities a multitude of tools to correlate with back-end databases to thwart supply chain exploits.

The Defense Department, a very large EPC user, has accepted the risk posed by RFID to the armed forces' logistics chain. The high-impact RFID threat is terrorists with weapons of mass destruction masquerading as real cargo behind an EPC chip. The threat of terrorists using counterfeit or stolen RFID chips is one element that contributed to the beefed-up authentication and traceability in second-generation EPC chips.

Information criminals remain fixated on the proven formula of robbing banks, because that's where the money is. This means hackers are likely to devote more effort to stealing personal and sensitive information from RFID chips used in banking and identity applications than in supply chain operations. These RFID chips span a much broader technology spectrum, with multiple industry standards and proprietary technologies being used to store, transmit and secure the information.

The banking industry eschews the RFID acronym and has developed standards for "contact" and "contactless" cards. The most common type of contact card is the ubiquitous magnetic-stripe variety. Newer contactless cards are replacing magnetic-stripe cards in many applications, and the standard limits the reading distances of those cards to 10 centimeters — 4 inches.

Those cards are highly configurable and support both symmetrical and asymmetrical key encryption for data stored on the card and in transit. Despite some sophisticated and widely publicized proof-of-concept academic cryptanalysis exploits — which are very difficult to reproduce in the wild — don't feel compelled to buy an RF-shielded wallet to protect these cards. History tells us that a single server exploit will produce a bigger information bonanza than the entire universe of RFID hacks. ▸

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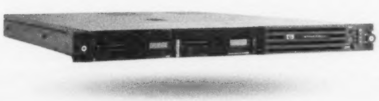

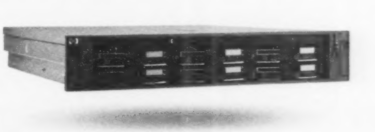

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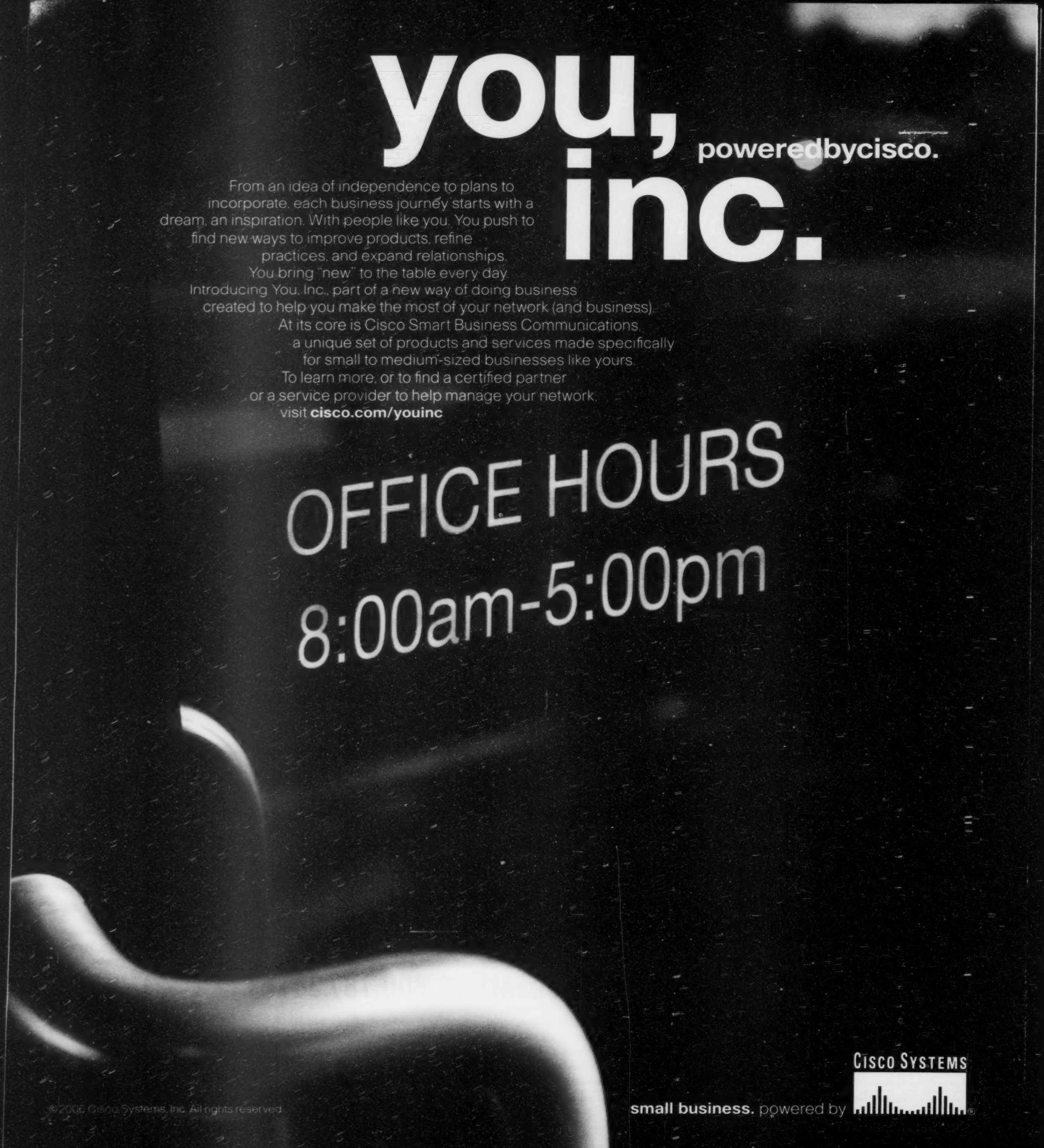

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MANAGEMENT

05.01.06

Squeezing Dollars From Maintenance
Savvy IT execs, such as Anthony Abbattista at Allstate Insurance (right), are going beyond rote hardware and software consolidations to reduce IT maintenance and operations costs and liberate additional capital for discretionary projects. **PAGE 40**

Career Watch
The need for IT marketing skills is on the rise; the best high-tech jobs may not be in the locales with the most overall job growth; and IT workers' confidence reaches giddy heights. **PAGE 44**

OPINION
How to Learn with Peers
Paul Glen notices that IT managers often miss opportunities for valuable peer-to-peer learning. He suggests ways to build an environment that fosters eureka interactions with colleagues. **PAGE 44**

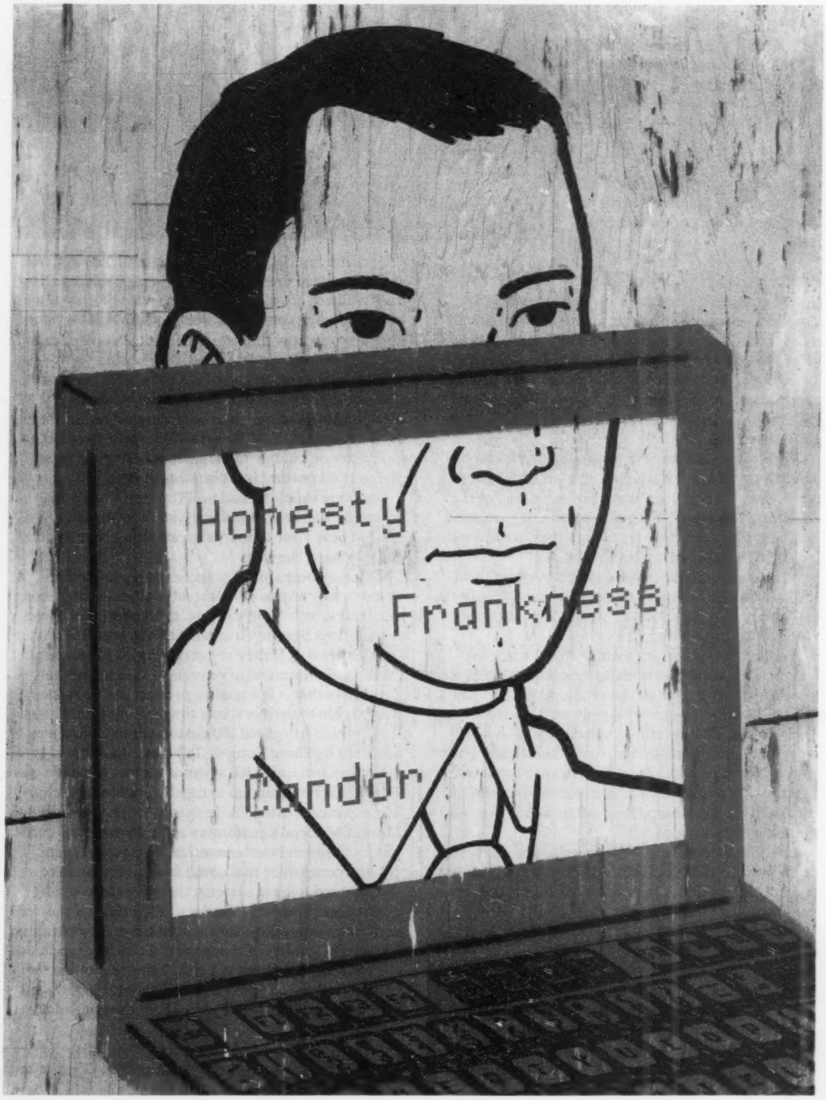

ILLUSTRATION BY DAN PAGE

SAVING FACE IN CHINA

Good IT systems can help bridge a critical cultural gap.

BY MARIA TROMBLY

SHANGHAI — In the West, companies want to put on a good face for customers, even if it means having to admit mistakes. Righting wrongs is a big part of a good public image, and a good internal image as well.

In the East, particularly at traditional companies, saving face is important. Saving face means that you don't admit your own mistakes and you don't publicly humiliate co-workers by exposing their mistakes.

This can create management challenges for companies doing business in China. Foreign companies are particularly vulnerable, since a Chinese employee who admits to making a mistake not only shames himself, but also brings shame to his country in front of foreign visitors. As a result, simple problems left undiscovered can easily grow into full-blown crises.

One manager at an international company in Shanghai says he routinely sends foreign employees to give bad news to customers, since foreigners don't get embarrassed as easily. (Some of the people interviewed for this story did not want their names used because "face" is a sensitive topic.)

TECHNOLOGY FOR TRANSPARENCY

"This is one of the critical areas that we have to face upfront," says How Newseng, general manager at Fairchild Semiconductor Corp. in Suzhou, located near Shanghai. The company's global headquarters is in South Portland, Maine.

How says that one way of addressing the face-saving problem is to have good technology in place to automate reporting functions. "We want to take out any personal involvement in the system," he says. Using PeopleSoft software "allows us to have good detection if anything goes wrong," How explains.

But Chinese people aren't unique in not wanting to pass on bad news. "Other countries in Asia find it difficult," says John Oska, regional supply chain manager for the Asia-Pacific region at Sealed Air Packaging Co., a Shanghai-based division of Sealed Air Corp. in Saddle Brook, N.J. The company currently has two small plants in China and is building a new plant in Shanghai.

"Sales reps in countries such as Indonesia are reluctant to advise customers that a shipment is late or not to spec until the customer calls to complain," Oska says.

One of the ways around that problem is to give the customer direct access to the information, he says, but many of his company's local suppliers aren't capable of providing that level of IT-enabled visibility. Fortunately, it's a lot easier to demand visibility internally, and Sealed Air is rolling out SAP 4.7 this year to do just that.

Shanghai General Motors Co. is also implementing SAP software this year, and it's making a concerted effort to improve the reporting systems of its suppliers as well. The exploding pace of growth of China's automotive sector makes good systems a necessity, says Chris Gubbey, executive vice president at Shanghai GM, a 50-50 joint venture between General Motors Corp. and a local partner, Shanghai Automotive Industrial Corp.

GM first came to China in 1999. By 2005, China had become the second-largest market in the world for the company. "It is the world's fastest-growing vehicle market," says Gubbey, noting that the number of cars GM has sold in China has grown from 30,000 in 2000 to an expected 400,000 this year. That pace of growth puts significant stresses on the technology infrastructure, he says.

DIFFERENT STROKES

NOT ALL COMMUNICATION problems in China are cultural.

Lenovo Group Ltd., the computer maker that recently acquired IBM's PC division, had problems getting sales reports from the small stores that sold its computers. It found that while midsize distributors were using a browser-based system and larger distributors filed XML feeds, the mom-and-pop stores weren't hooked up to the Internet.

Still, everybody had a cell phone, says Wu Ying, executive director of business transformation. So a year ago, Lenovo put in place a cell-phone-based sales reporting system, and now mom-and-pop store owners send Short Messaging Service messages on their cell phones. "It's unique," he says.

Today, at least 85% to 90% of all distributors file sales data, enough to enable accurate forecasting and to help Lenovo know when to offer promotions. "If our eyes are blind, then we will lose the game," says Wu.

– MARIA TROMBLY

"At the beginning, everyone was paper-driven," according to Gubbey, who deals with 276 local suppliers. "But with the volume expansion and the complexity expansion, they can't survive that without systems in place for managing it."

As a result — and despite a vicious price war and ongoing cost-cutting — Shanghai GM demands good management systems from its suppliers.

"You don't get to talk about price until you've met quality, service and technology requirements," Gubbey says. "When they have transparency, they react to things more quickly. If something goes wrong, you see it right away."

PERSUADING SUPPLIERS

Not all companies have that kind of leverage with suppliers, though. Wilfredo Tan is the managing director of the Asian supply chain at Reston, Va.-based World Kitchen Inc. He works with hundreds of factories in China as he looks for companies to produce ceramics, cookware and kitchenware — goods that are then sold through leading retailers and the company's own stores.

World Kitchen uses SAP internally, but it can be difficult to convince a supplier that an ERP system is worth it. "Technology is the largest chunk of the challenge," he says. "Not many companies are starting to invest in technology, though they are upgrading their manufacturing equipment."

When a supplier does have an ERP system installed, it makes a big difference, Tan says. "Without ERP, we have to have on-site people at that factory. We monitor everything," he says.

To encourage IT investments, World Kitchen's technical experts work with its suppliers. "Our IT people come out and do their own evaluation," Tan says. "We walk them through what we want them to have."

Having an ERP system in place helps alleviate some of the cultural barriers to communication between Chinese suppliers and Western companies, Tan says. "It makes it more convenient to communicate with each other and helps with forecasting and planning," he explains.

An ERP system is also a good indicator that a supplier has internal processes and procedures under control, Tan adds. "If they don't have ERP, their procedures are a little unstable."

TAKING CHARGE

Some international companies take matters into their own hands and build complete planning systems for their suppliers. A director for one such company, who did not want his name used, says that getting a straight answer can be very difficult, and people in China are sometimes reluctant to take responsibility. "We've been burned way too often," he says.

> "WE WANT TO TAKE OUT ANY PERSONAL INVOLVEMENT IN THE SYSTEM."
>
> **HOW NEWSENG**, GENERAL MANAGER, FAIRCHILD SEMICONDUCTOR LTD., SUZHOU, CHINA

Good technology can be very helpful, he says, but an ERP system doesn't solve cultural problems all by itself. "There are plenty of people with ERP systems having a tough time," he says. "If you put in a system, how do you know the data is correct? People are very good at pretending to do what they're told."

Process is even more critical than technology, according to the director. "The system is secondary. We spend 90% of our time on processes rather than systems installation," he says. "We spent two and a half years on change management before we spent one cent on putting in a planning system."

Since his suppliers had no IT systems at all, his company was able to write a system for the suppliers and host it for them. "It's something we can do cheaply here," he says.

Chinese companies are increasingly using ERP systems as a way to demonstrate reliability to foreign customers, says Scot McLeod, marketing vice president at Ross Systems Inc., an Atlanta-based ERP vendor. "Especially if they're producing goods for export, there's hefty demand to provide assurance to their customers that it is a quality product and that they will be able to deliver it in a timely fashion," he says. Ross, which has about 150 customers in China, was acquired by Hong Kong's CDC Corp. in 2003.

But in China, all ERP systems are not created equal. They must be equipped to handle double-byte characters, since written Chinese is not alphabet-based. Most of McLeod's customers are multinational companies based in North America, Europe or Japan.

"The companies that come from overseas have a strong need to have systems that give them strong control and visibility," he says. "Especially if they're setting up operations for the first time, they're taking a risk. The quality of the labor is a risk; the quality of the local management is a risk. They're looking for ways to reduce the risks that they are taking. By putting a system in place, it gives them the control they need to do that." ▸

Trombly is a freelance writer in Shanghai. Contact her at maria.trombly@gmail.com.

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Summit Agenda

8:00am – 8:30am **Registration and Networking Breakfast**

8:30am – 8:45am **Welcome and Opening Remarks**
Julia King, National Correspondent and Executive Editor, Events, Computerworld

8:45am – 9:30am **Opening Featured Speaker**
Farzad Golshani, Vice President - IT Infrastructure, Transamerica

9:30am – 10:00am **IT End User Case Study: Chicago Mercantile Exchange, Inc.**
Jim Krause, Managing Director and Chief Information Officer, Chicago Mercantile Exchange, Inc.

10:00am – 10:30am **IT End User Case Study: Lafayette Consolidated Government**
Keith Thibodeaux, Chief Information Officer, Lafayette Consolidated Government

10:30am – 11:00am **Refreshment and Networking Break**

11:00am – 11:30am **IT End User Case Study: Integro Ltd.**
Fred Danback, Head of Global Technology Services, Integro Ltd.

11:30am – 12:00pm **IT End User Case Study**

12:00pm – 12:45pm **Panel Discussion: IT Infrastructure**
Moderator: Julia King, National Correspondent and Executive Editor, Events, Computerworld
Panelists: Jim Krause, Managing Director and CIO, Chicago Mercantile Exchange, Inc.; Keith Thibodeaux, Chief Information Officer, Lafayette Consolidated Government; Fred Danback, VP Global Technology, XL Global Services

12:45pm – 2:00pm **Networking Lunch**

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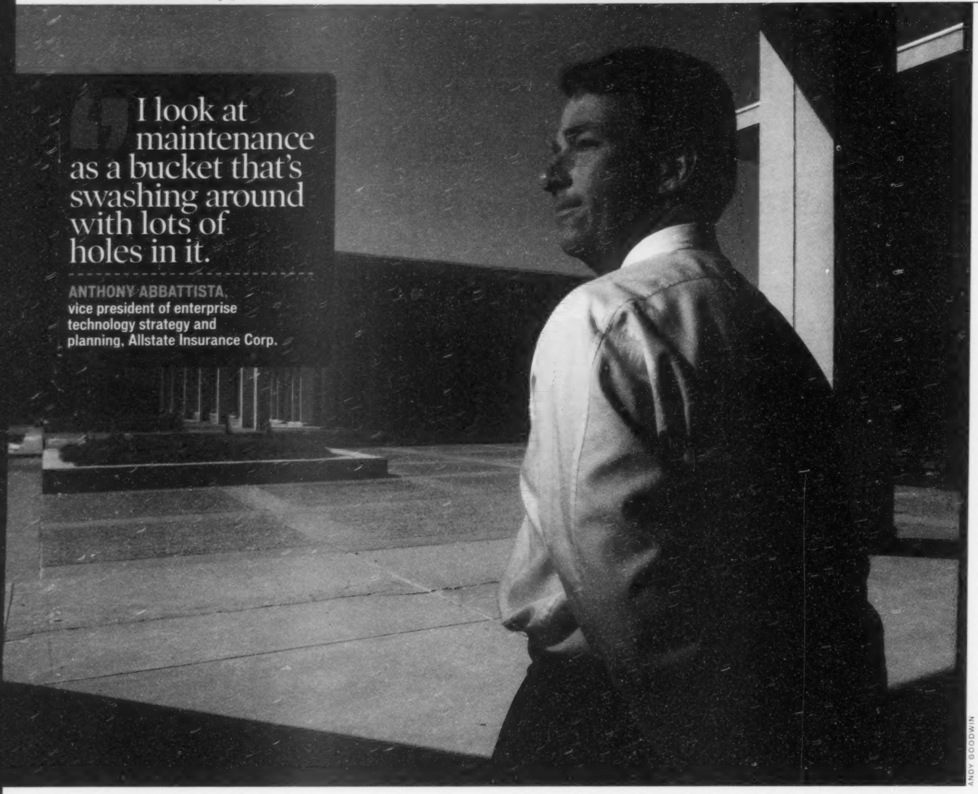


ANDY GOODWIN

> I look at maintenance as a bucket that's swashing around with lots of holes in it.
>
> **ANTHONY ABBATTISTA,** vice president of enterprise technology strategy and planning, Allstate Insurance Corp.

Creativity and discipline can liberate capital for discretionary projects. *By Thomas Hoffman*

Squeezing Dollars *from* Maintenance

IT'S A conundrum many IT executives face: how to drive down spending on IT maintenance and operations to free up capital for discretionary IT-business projects.

The problem requires creative thinking on the part of CIOs who have already taken pains to reduce IT costs in response to financial pressures from CEOs and chief financial officers. Many IT chiefs have plucked the so-called low-hanging fruit such as hardware consolidation and standardization and have renegotiated software licensing agreements, making it increasingly difficult to find new avenues for operational savings. But senior business leaders continue to yell "Cut!"

"I look at maintenance as a bucket that's swashing around with lots of holes in it," says Anthony Abbattista, vice president of enterprise technology strategy and planning at Allstate Insurance Co. in Northbrook, Ill. The idea, says Abbattista, is to determine how much money is leaking through those holes and figure out a way to plug them up.

One technique that world-class IT shops have been using to control IT operational costs is to set up centers of excellence where IT workers are grouped by areas of expertise such as data center management, Java or .Net development, says Anton Kritzinger, a consultant at Compass North America in Toronto. "Rather than having a number of groups that are good at what they do, you end up with one that is very good at what they do," says Kritzinger. "The payback is significant."

Allstate has done this successfully. "The first thing we did was look for duplicative activities where different organizations were doing similar things," says Abbattista. Beginning in February 2003, the company's IT department made structural changes to create technology groups that handled common activities across the organization, he says.

Around the same time, Allstate also began conducting "white-collar timekeeping" to help Abbattista and other IT managers track which projects IT staffers were working on at any given time. Through these efforts, which include benchmarking its IT skills costs, Allstate has shifted the percentage of annual IT spending in operations and maintenance from more than 70% in 2003 to between 30% and 35% today, says Abbattista. Each year since 2003, Allstate has reinvested "a few hundred thousand dollars" in savings generated by the centers of excellence toward discretionary IT spending, he adds.

Some of Allstate's projects that have benefited from the cost savings include a "huge investment" to modernize analytic systems throughout the company. The project, which was launched in January 2003 and will conclude later this year, has yielded "great payback and hasn't required any incremental funding," Abbattista says.

Banking on Benchmarking

To help reduce its IT maintenance costs, Royal Bank of Canada (RBC) makes extensive use of benchmarking services from vendors such as Compass North America and Gartner Inc. They help the bank measure its IT operating costs against those of other world-class companies and identify processes it can improve to run those activities more cost-effectively.

"My budget may go up because we're driving incremental revenues through the mainframes, so that may be a good thing," says Dick Swadley, executive vice president of IT infrastructure at the Toronto-based bank. But "that may not tell the story that the business needs to know" when it comes to demonstrating the steps his group is taking to hold down the bank's IT infrastructure costs, he says. Benchmarking helps Swadley clarify both costs and savings.

For instance, RBC's IT infrastructure group has benchmarked the costs of buying, operating and maintaining its PC LANs three times in the past seven years. By benchmarking these and other IT unit costs, RBC has been able to identify improvements it could make to streamline those operations and have them run more efficiently. Swadley estimates that the bank has been able to drive down its IT infrastructure expenses by 5% to 8% annually by applying these lessons.

Benchmarking allows RBC to document the areas where its efficiency and costs are improving and to show the effect of activities that were started since the last benchmark, Swadley says. Still, he doesn't recommend benchmarking any particular area more often than once every two or three years, since IT departments need to allow enough time for any operational changes they might implement to bear fruit.

Waste Not

Other avenues for maintenance savings:

- **LICENSED SOFTWARE.** Large corporate customers rarely go back to review the number of employees who are actually using a licensed software system, even after staff cutbacks.
- **SOFTWARE MAINTENANCE.** Instead of paying the vendor 18% to 22% (on average) of annual licensing fees for maintenance, shop around. There's a growing number of third-party maintenance vendors available, and many offer maintenance at a fraction of the cost.
- **LABOR.** The biggest IT cost category is people. Consider using offshore labor or putting some maintenance work out for bid.
- **BUSINESS-BASED SIZING.** Few IT managers have looked at the size of their companies and tried to determine the number of servers, mainframe processors, printers and other devices they really need in order to support the organization. It may be smaller than you think.
- **CREATIVE FINANCING.** Approaches include establishing lines of credit with finance providers to lease hardware, or classifying hardware leases as operating leases so the equipment isn't listed on the balance sheet as debt.

– THOMAS HOFFMAN

Motoring Past Maintenance

When Rich Hoffman joined Hyundai Motor America in Fountain Valley, Calif., as CIO in early 2003, about 90% of the company's annual IT spending was going to maintenance and operations, and just 10% was earmarked for projects that were deemed important by its business leaders.

Hoffman immediately set a goal of driving half of all IT spending into discretionary projects.

By October of that year, 49% of Hyundai's IT spending was being pumped into new projects. How was Hoffman able to turn the ship around so quickly? Two ways: by tracking its internal and contract labor resources more effectively, and by enacting more stringent quality-control requirements around Hyundai's application-development projects, he says.

"A horrendous amount of unmonitored resources were going toward minor break-fixes that were unscheduled," says Hoffman. When he first joined Hyundai, 93% of applications that were developed internally required at least one bug fix. Now, he says, that figure has been whittled to 4%.

"Most IT organizations lack the discipline to run good business processes," like tracking labor resources against projects, says Hoffman, a 25-year IT veteran.

In 2003, Hyundai didn't have an application-development organization per se. Each of the 40 or so people on the IT staff was responsible for developing and maintaining applications for the business units to which they were assigned. But in March of 2005, the company's IT organization was restructured as a stand-alone company, now known as Hyundai Information Services North America LLC, with Hoffman as the president and CEO.

Hoffman has challenged his managers to apply a much more rigorous approach to procuring hardware, software and services, and this has helped the new IT organization continue to lower its operating costs, he says.

Spend to Save

Joe Trentacosta walked into a different situation when he became CIO at Southern Maryland Electric Cooperative (SMECO) in 2003. At the time, the Hughesville, Md.-based electric utility "had a pretty neglected" IT infrastructure that hadn't been upgraded for about 10 years, he says. As a result, 80% to 90% of the company's IT spending over the next few years went toward updating its antiquated IT infrastructure, including the replacement of all 50 of its Windows and Unix servers and the creation of a state-of-the-art data center.

> "A horrendous amount of unmonitored resources were going toward minor break-fixes that were unscheduled.
>
> **RICH HOFFMAN,** PRESIDENT AND CEO, HYUNDAI INFORMATION SERVICES NORTH AMERICA LLC

But the $600,000 that SMECO pumped into its IT infrastructure investments has had a net positive effect on discretionary project spending. The newer systems have helped push down maintenance costs and free up project funding. And by outsourcing the company's help desk operations last year, SMECO was able to increase end-user support from 50 hours a week to 168 while lowering its help desk costs by 10% annually, says Trentacosta.

Now, SMECO is allocating about 32% of its annual IT spend to discretionary projects, he says, "and we're trying to drive that up."

Licensed to Save

In 2000, IT managers at Burlington Resources Inc. were given an ultimatum by top brass: Cut its geological software licensing costs, or the company would outsource the management of those applications. "It's amazing what kind of motivation that can be," says Dan Shearer, manager of technology enhancement at the Houston-based energy company.

After hiring a consultant to help the company get its arms around its software licensing agreements, IT managers at Burlington Resources discovered that many of its licenses were underused or unused. In 2001, the company began deploying software from Open IT Inc. in Houston to monitor its use of high-end software for global oil and gas exploration.

The monitoring software has helped Burlington Resources pinpoint which geological software is being used in which offices and by whom, says Shearer, and that has highlighted opportunities for savings. For example, prior to deploying Open IT, Burlington Resources was licensing geological software only on a local basis, he says. By shifting to a mix of regional and global software licenses, the company was able to reduce its software expenses by $5 million between 2002 and 2005.

"It was quite shocking," says Shearer. "No one was prepared for this [license-monitoring tool] to work as well as it did."

Burlington Resources has been able to channel all the savings into discretionary projects, including the development of an environmental health and safety system and a learning management system that was on the verge of being abandoned. "That project never would have made it if the dollars weren't available," says Shearer. "It was at the bottom of the queue." ▪

Career Watch

Rebecca Wettemann

Q&A

TITLE: **Vice president of research**

COMPANY: **Nucleus Research Inc., Wellesley, Mass.**

Savvy CIOs and IT consultants frequently point out the need for good communication between IT and business professionals. Some IT executives take this recommendation a step further and actively market an IT department's capabilities to senior business leaders via service catalogs and other techniques.

Perhaps that helps explain why half of the 60 IT and business executives who responded to a February online survey conducted by Nucleus Research cited IT marketing as the most important skill they need to develop within their staffs.

***Computerworld*'s Thomas Hoffman spoke with Rebecca Wettemann about the types of skills that survey respondents say are in strongest demand and the reasons behind this.**

Why are IT marketing skills in such high demand? I think really being able to promote what you're doing is becoming an important skill to develop.

Plus, the need to develop people skills is becoming more and more important.

Yet 34% of respondents cited IT strategy and planning as the most important nontechnical skills to develop. With the increased focus on [service-oriented architecture], many IT managers are asking how they can focus their resources most effectively. It's a more structured focus because SOA is enabling people to get out of the code-building race and leverage what they've built to provide greater value to the company.

Two-thirds of the respondents said help desk skills are the most important technical skills needed in the IT team. Why is that? As end users use more applications, they may be having more of their work tied to using these applications. And as companies get more involved with security provisions, they're making sure the help desk gets more involved in supporting end users.

When asked which IT position is most difficult to hire for, the highest number of respondents – 33% – said systems integration. How come? I think it's hard to find those people because those skills are in such high demand right now.

How do you respond to skeptics who insist that despite research that cites strong demand for technology skills such as Java and .Net, many people with those skills are unemployed or underemployed? The actual technology skills are very important, but so are the business management and project management skills that go with them.

It's a three-legged stool. Yes, you need .Net and Java skills, but have you developed the business management and project management skills to map out a project plan or work effectively with a project team?

Page compiled by Jamie Eckle.

READING BETWEEN THE LINES

That's what IT pros have to do with the Milken Institute's Best Performing Cities ranking of the 200 largest U.S. metropolitan areas. The think tank lists the locales based on five- and one-year growth in jobs, salaries and gross domestic product.

But if you check out the chart on the MilkenInstitute.org Web site, be sure to scroll over to the column for the "2004 high-tech GDP location quotient," a measure of high-tech concentration. Do that, and No. 1 Palm Bay-Melbourne-Titusville, Fla., still looks pretty good, with a high-tech GDP LQ ranking of 13. But Nos. 2 through 5 on the Best Performing Cities list all drop below No. 100 in the high-tech GDP LQ ranking. Conversely, metro San Jose, No. 1 in high-tech concentration, is only 185 overall.

Some happy mediums can be found: Huntsville, Ala., is No. 28 overall and No. 5 in high-tech concentration, and Albuquerque ranks 43rd and seventh, respectively. But before you plan a move, keep some other factors in mind. Both Huntsville and Albuquerque are relatively small metro areas, and Huntsville's concentration of high-tech is almost entirely due to the presence of NASA.

The chart is interactive, so just click on any category to get rankings.

Milken calls its report the 2005 Best Performing Cities, but all data is from 2004.

— Jamie Eckle

High-Tech Heaven

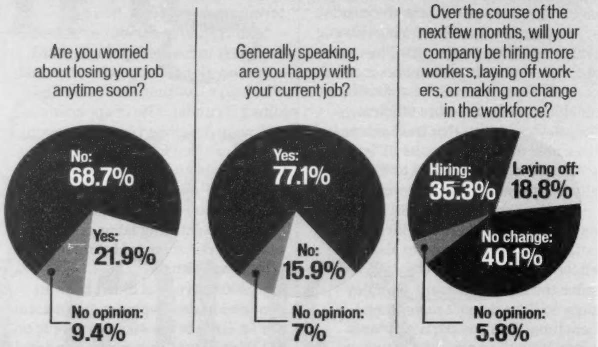
Top large U.S. metropolitan areas for high-tech concentration, 2004 (overall ranking is in parentheses)

1.	San Jose-Sunnyvale-Santa Clara, Calif. (185)
2.	Boulder, Colo. (92)
3.	Cambridge-Newton-Framingham, Mass. (142)
4.	Durham, N.C. (106)
5.	Huntsville, Ala. (28)
6.	Seattle-Bellevue-Everett, Wash. (127)
7.	Albuquerque (43)
8.	Wichita, Kan. (189)
9.	Colorado Springs (71)
10.	Essex County, Mass. (116)

SOURCE: MILKEN INSTITUTE, SANTA MONICA, CALIF.

Confident, Yes, but Let's Not Get Cocky

IT workers are almost giddy with confidence, according to the Hudson Employment Index. The index is calculated monthly for the U.S. as a whole, for various regions and cities, and for several industries. IT's confidence level for March 2006 towers above that of any other category, whether it be an industry or a geographic area. A look at IT workers' answers to three of the survey questions gives you an idea of why they're so self-assured:



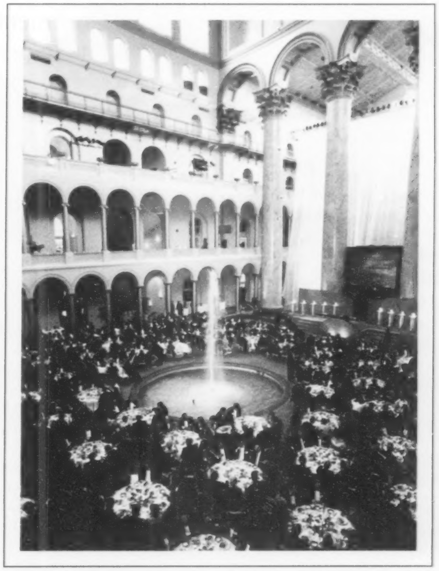
BASE: IT EMPLOYEES AMONG 9,442 WORKING AMERICANS SURVEYED BY PHONE
SOURCE: HUDSON HIGHLAND GROUP INC., APRIL 2006

On June 5th, 227 Laureates from 23 countries will be honored at the largest global IT awards program.

The Computerworld Honors Program recognizes individuals and organizations from around the world for their visionary use of Information Technology to benefit society. The top technology leaders of the world come together in June in Washington, D.C., to honor these Laureates for their accomplishments.

You'll find exclusive coverage of this annual event, including profiles of Honoree organizations, online at Computerworld.com beginning June 6 and in print in Computerworld's June 12 issue.

For more information on the Computerworld Honors Program, visit **www.cwhonors.org.**



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Goebel to Head IT At DHL Express

DHL International Ltd., a Plantation, Fla.-based express delivery and logistics company, has appointed **MARYANN GOEBEL** CIO for DHL Express in the Americas/Asia-Pacific region and emerging markets/Latin America. Goebel was formerly CIO at General Motors North America.

Hackenson Chosen CIO at Lucent

ELIZABETH HACKENSON has joined Lucent Technologies Inc. in Murray Hill, N.J., as CIO. Hackenson, who previously held a similar position at MCI Inc., has more than 25 years of experience in IT, with the past 12 in the telecommunications industry. She replaces Ruth Bruch, who left Lucent recently for a position at Kellogg Co.

TicketsNow Hires Giannantonio as CTO

TicketsNow, a Chicago-based online marketplace for event tickets, has chosen **FRANK GIANNANTONIO** as chief technology officer. Previously, Giannantonio was CIO at Lands' End Inc. and Victoria's Secret Direct LLC/The Limited Inc.

Hartford Life Group Hires Esposito

The Hartford Financial Services Group Inc. in Hartford, Conn., has named **MARK ESPOSITO** as CIO for its individual life division. Esposito, who is also vice president and director of business technology, will be a member of the senior planning group, which helps set direction for the division.

Jenks Named CIO at Safeco

Safeco Corp., an insurance company in Seattle, has named **WILLIAM JENKS** CIO. Jenks most recently served as executive vice president and CIO for worldwide operations at Publicis Groupe SA in Paris.

PAUL GLEN

How to Learn With Peers

LAST MONTH, I wrote about a missed opportunity for learning that's sadly too common among IT managers. While many believe that a career in management requires a commitment to continuous learning, they often miss out on chances to glean ideas, insights and techniques for leadership from their peers.

For a variety of reasons, they are unable or unwilling to share experiences of success and failure with their colleagues. Posturing and perceptions of competitive pressures interfere with some of the most potentially productive relationships in the workplace.

PAUL GLEN is the director of the Developing Technical Leaders program (*www.developingtechnicalleaders.com*) and author of the award-winning book *Leading Geeks: How to Manage and Lead People Who Deliver Technology* (Jossey-Bass, 2002). Contact him at **info@paulglen.com**.

But how do you, as a manager, foster an environment that encourages and facilitates these exchanges? Below, I have gathered some of my own ideas and have mixed in some from your peers who read *Computerworld* who have generously shared their experiences.

Have weekly meetings without the boss. Let's be honest — open discussions of challenges and failures are less likely to take place when the guy who writes everyone's salary review is sitting there with a notepad. For peers to behave as a group, they need time away from the official authority figure. They need to have a sense of mutual trust that can't form in the absence of time alone together.

At these meetings, they should review current situations and use the opportunity to discuss experiences and find solutions. If the meetings become only discussions of experience and theory, then they will be considered less important and ultimately will die from lack of participation.

Institute brown-bag lunches with topic discussions. Although it's important to keep meetings focused on practical matters, a dose of theory is still useful, too. Set aside a few of the meetings to explicitly discuss an article or idea. Select a couple of newspaper or magazine columns or even a Harvard Business School case study and have a go at open conversation. A good discussion of theory can help people make sense of their experiences and environments.

Assign a task force of peers to oversee a change initiative. But be forewarned: In my experience, when a group of colleagues is asked to oversee a change initiative that affects all areas of responsibility, there are three general patterns of group dynamics:

- They cohere as a group and really learn a great deal about one another and their organization, succeeding magnificently.
- They cohere as a group and agree to sabotage the effort together, learning little besides how to obstruct change.
- They wallow around waiting for someone to take the lead, making little progress.

When this strategy works well, it's fantastic. But getting some outside help from a consultant or other facilitator can improve the chances of having a valuable peer-to-peer learning experience.

Disclose your own failures and ask others to disclose theirs. People learn a lot more from failure than they do from success. Most people who have great success don't really know why they succeeded; they just know that they did. They may delude themselves into believing that they've discovered some secret methodology, but they usually can't reproduce the results.

But failure is a great teacher if one makes the effort to absorb its lessons. Sharing experiences of failure not only helps to process the lessons but also helps to create an environment of trust in which it's safe to admit that no one is perfect.

Encourage participation in associations. Not all peers are members of the same company. Sharing with peers from the industry is often less threatening than sharing with perceived competitors inside the company.

Shop around and learn about which local chapters and national associations — such as the Project Management Institute or the Society for Information Management — are available in your area.

In IT, we are generally introverted, so looking for connections outside of work isn't necessarily second nature. Remember that what you get out of an association is often proportional to what you put in, so try out a few and find a place where you can both contribute and learn.

Attend outside courses designed to help peers learn together. There are a few programs designed to encourage this type of learning, ranging in length from a few days to a year or more.

It is possible for IT managers to overcome the natural tendency to isolate themselves from their peers, but it takes time and patience.

If you can begin to take advantage of these kinds of opportunities, everyone benefits. ▸

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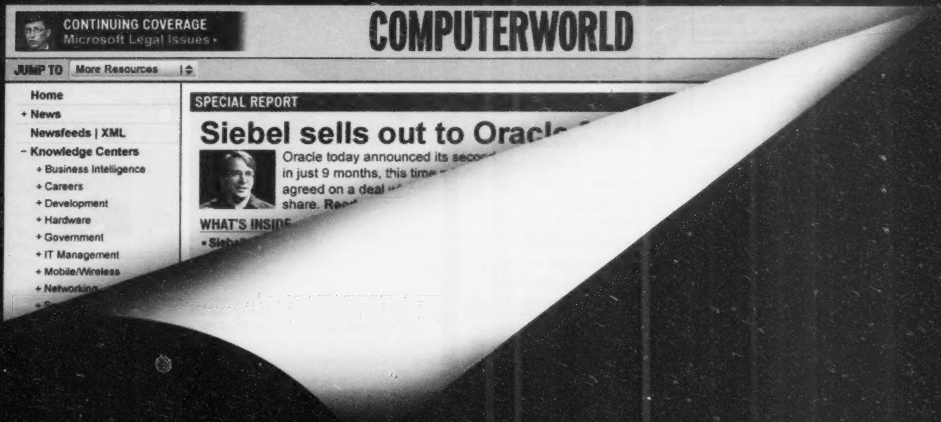
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Sun

said Sun has too many layers of managers that have to get involved in decisions on sales issues — a problem that has persisted for years. "The salesman had to go talk to his boss, his boss had to talk to his boss, and then his boss talked to his boss — and then the decision would trickle down," Thomas said. "When you want an answer, you want an answer."

Daniel Grim, executive director of networks and systems at the University of Delaware in Newark, called on Schwartz to improve the support for Solaris running on Sun's Opteron-based x64 systems among independent software vendors.

"I'd like to have a better understanding of what their strategic directions really are relative to Sparc vs. Opteron," Grim said. "We're excited about the Opteron-based systems, but we also like to run Solaris, and we don't see [independent software vendors] following Solaris onto Opteron."

Grim added that having Linux available on the x64 line isn't a big selling point for Sun in his IT shop. "We can buy machines that run Linux from lots of people," he said.

Schwartz's Burdens

Concerns such as the ones voiced by Thomas and Grim are now entirely Schwartz's problem. He was named to replace McNealy — one of the most combative, colorful and outspoken vendor executives in the IT industry — as CEO on the same day that Sun reported a net loss of $217 million for its third quarter.

However, revenue grew 21% year over year to $3.18 billion. That was partly a result of the addition of revenue from Storage Technology Corp., which Sun bought last August. The growth prompted McNealy to say that the company's operations have been "stabilized" after years of financial struggles.

McNealy has said in the past that he and Schwartz, who previously was Sun's president and chief operating officer, were "joined at the hip." And during a joint conference call last week, McNealy — who will continue as Sun's chairman and remain a full-time employee — said that the two executives are still "highly aligned" strategically.

But analysts said that if Schwartz wants to hold on to the CEO job, he will have to give Wall Street what McNealy hasn't been able to deliver since the end of the dot-com boom: consistent profitability.

> [Sun's] salesman had to go talk to his boss, his boss had to talk to his boss, and then his boss talked to his boss – and then the decision would trickle down.
>
> **SAM THOMAS,** IS SUPERVISOR, CITY OF OAKLAND, CALIF.

The CEO change "indicates that the financial market had finally come to the end of [its] patience more than anything," said Charles King, an analyst at Pund-IT Inc. in Hayward, Calif. "The company has had a really tough time over the last three or four years." King called Schwartz, who is 40, "a conventional choice" for Sun.

"This is a stay-the-course signal," agreed Rob Enderle, an independent analyst in San Jose. "In fact, the real question may be whether there is really any change at all, since the reporting relationships remain very similar."

However, Schwartz said he plans to conduct a "comprehensive review" of all aspects of the company over the next two months, leading into the start of Sun's next fiscal year. "We're going to be making sure we're aligning the organization for growth," he said.

Schwartz emphasized the importance of research and development, on which Sun spends about $2 billion annually. And regarding the issue of possible workforce cuts, the new CEO said the purpose of the planned review is "not to figure out how to take a whack at head count." But he added that Sun will do some "pruning" of operations that aren't yielding returns.

> I don't think there will be much of an alarm over this change. It would have been quite the opposite if the new CEO was coming from outside of Sun.
>
> **LISA SAICHOMPOO,** SOFTWARE AND SYSTEMS MANAGER, UNIVERSITY OF NEVADA, RENO

Schwartz announced some immediate changes last week. He said that Greg Papadopoulos, who has been Sun's chief technology officer, will be executive vice president of research and development. Schwartz also said there will be an increased emphasis on executive teamwork; for example, he plans to share an office with Mike Lehman, Sun's chief financial officer.

The choice of Schwartz to replace McNealy was comforting to Lisa Saichompoo, software and systems manager at the University of Nevada, Reno. "I don't think there will be much of an alarm over this change," she said. "It would have been quite the opposite if the new CEO was coming from outside of Sun."

But Saichompoo did have a suggestion for Schwartz: Maintain the company's focus on developing its x64 servers.

Neal Tisdale, another x64 user, said that Sun needs to improve its support for the Opteron-based machines. But he praised Schwartz's promotion to CEO.

"I think it's a great change," said Tisdale, who is vice president of software development at Atlanta-based NewEnergy Associates LLC. "[Schwartz] is dialed into what drives this industry." ◗

Robert McMillan of the IDG News Service contributed to this story.

The Time Was Right for a Change at Sun, McNealy Says

SCOTT McNEALY, one of Sun's cofounders and the company's CEO for the past 22 years, was adamant last week that it was time for a change at the top – and that it was his call to make the change.

"This was my decision that was supported by the board," McNealy told reporters during a conference call with new CEO Jonathan Schwartz last Monday. Sun's board of directors held a private conference call of its own late on the Friday before the change was announced, McNealy recounted, "and I said, 'Gang, it's time.' "

The end of McNealy's tenure as CEO comes under less-than-ideal circumstances – Sun has either lost money or been barely profitable since 2001. But McNealy pointed to Sun's revenue growth for the quarter that ended March 26 as a sign that the company has turned the corner.

"I wasn't going to hand it over when the thing was deteriorating postbubble," McNealy said. "Now we've got it stabilized." He also said that Sun has "fixed" its product line through steps such as embracing Advanced Micro Devices Inc.'s Opteron processors for commodity systems and introducing its CoolThreads line of high-density, multithreaded servers.

McNealy gave Schwartz credit for many of the strategic changes that Sun has made over the past few years, such as open-sourcing Solaris and adopting a per-employee pricing model for the company's Java Enterprise System software.

Schwartz has "been calling a lot of the plays over the last couple of years," said Jonathan Eunice, an analyst at Illuminata Inc. in Nashua, N.H. "This is his architecture. This is his strategy that Sun is playing."

In addition, Schwartz has won praise for implementing layoffs that McNealy had avoided. "He has proven he can deal with tough situations managerially," said Laura Koetzle, an analyst at Forrester Research Inc.

But Ovum Ltd. analysts David Mitchell and Gary Barnett warned in a research note that Schwartz still "has a major task on his hands" at Sun. They said that "dramatic and painful changes" must be made, such as an overhaul of the company's software portfolio "that has to involve a good deal of divestment."

"Sun does not need 'more of the same,' or even 'a gentle touch on the wheel,' " Mitchell and Barnett wrote. "Sun needs to transform – and the next few months will show whether Schwartz has the vision and the ability to take the hard road to recovery."

However, Schwartz indicated that he won't just be looking to make more cuts. "Are there acquisition opportunities out there? Absolutely," he said during the conference call. "We will be one of the consolidators in the open-source industry."

McNealy, 51, is getting a new job, too. He will be chairman of Sun Federal Inc., a unit that handles sales to the U.S. government, while also remaining chairman of Sun's board.

– ROBERT McMILLAN AND
ELIZABETH MONTALBANO,
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FRANK HAYES ▪ FRANKLY SPEAKING

Surf City

MAYBE you saw the news stories last week — the ones with headlines like: "Judge: Web-Surfing Worker Can't Be Fired" and "Not Unreasonable for City Workers to Surf Web." One enthusiastic headline read "Surf to Your Heart's Delight." Great stuff, huh?

The news: New York City Administrative Law Judge John Spooner said that a city worker should be reprimanded, not fired, for disobeying his boss's order not to use the Web. In his decision, the judge compared the Internet to newspapers and phones, something "essential to living in the technological world."

It was a pretty good ruling. But unfortunately for the headline writers, Spooner didn't rule quite what those headlines said.

In fact, the headlines were almost universally wrong. Judge Spooner found that the no-personal-surfing rule was reasonable, just not fairly applied. And whether the employee will be fired isn't up to Spooner, but New York Schools Chancellor Joel Klein. And the judge didn't declare any universal right to surf.

Here's what happened, according to Spooner's 13-page ruling: Toquir Choudhri, a 14-year veteran of New York's education department, was accused of excessive absence, excessive lateness, early departures, making an improper leave request and disobeying an order to cease using the Internet for personal business.

Most of the charges were thrown out — the absences, lateness, early departures and leave request were, it turns out, all within acceptable department limits. And Choudhri was the only staffer in his office for whom the "no nonbusiness Internet use" rule was enforced, even though most other employees broke the rule, too.

Smell a rat? The judge did. He used the words "anger" and "spite" to describe the attitudes and actions of Choudhri's supervisors. The charges were trumped up, the judge said.

That didn't excuse Choudhri's insubordination, which included answering sarcastically when his boss asked about his Web surfing. But taken with other mitigating factors — including Choudhri's good work history, the fact that he only surfed when his work was done and his admission that he was wrong to disobey orders — it meant Choudhri deserved only a reprimand.

Incidentally, Judge Spooner also manages IT systems for his own department, New York City's Office of Administrative Trials and Hearings (OATH). Yes, really. Until 2002, he even ran OATH's networks himself. So he knows about network capacity utilization and spam and viruses. He's uniquely qualified to focus on technical issues relating to how city employees use the Internet.

But he didn't.

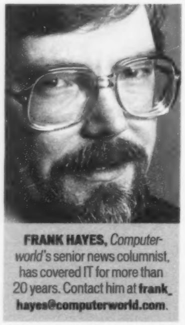
Instead, he dug into questions of productivity (not affected by the nonbusiness Web surfing in this case, he concluded). And managerial effectiveness (undermined by Choudhri's insubordination, the judge said). And abuse of a manager's power (singling out Choudhri with a ban on personal Web use was "harsh and arbitrary," Spooner determined).

Those were the real issues. The business issues. The ones that mattered.

Those are also issues you should keep in mind the next time someone asks IT for input on that slippery question of employee personal use of the Internet. Forget hot-button claims that it destroys productivity and demolishes bandwidth — or, on the other side, that it's every employee's right. Figure out the real technical issues for your networks. Then factor in the politics and personal agendas that always play into these thing. *Then* answer.

The result won't be some simple, elegant principle. It'll likely be a kludgy statement like: "Personal Web surfing is OK with IT as long as it doesn't reduce productivity, clog the network or cause other problems. If it does any of those things, it's no longer OK."

That makes a lousy headline. But it's a pretty good rule. ▸



FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com**.

What Did You Expect?

It's thunderstorm season, and when the power goes out at one branch office, the uninterruptible power supplies kick in, everything shuts down, and this pilot fish waits for power to return. And waits. And waits. "Late evening sees the power restored, and we go about bringing the network back to life," says fish. "Next morning, the phone rings. It's a very irate corporate admin wanting to know why we had an unscheduled outage the day before. I calmly explain about the storm, which I had no control over. His response? 'Next time, put it on the schedule before you have an unexpected outage!' "

SHARK TANK

Aha!

User complains her PC is dead – even Ctrl-Alt-Del won't work. Support pilot fish stops by, makes sure keyboard is plugged in, hits Ctrl-Alt-Del, and the login prompt pops right up. "I pretty much wrote the incident off as 'mechanic's syndrome,' where the problem doesn't occur in the presence of a mechanic," says fish. "Later, however, the user owned up to how she had removed the keys from the keyboard in order to clean it. Seems that when you switch the Alt key and the Windows key, Ctrl-Alt-Del no longer works."

Wishful Thinking

Support pilot fish gets a frantic call from an e-mail user: She's not getting any e-mails sent by her boss, so she missed a very important meeting. "The boss is on the warpath and blaming the mail servers," fish says. "We sent several test e-mails from the boss's mailbox with traces running, and the trace routes showed that the e-mails were being delivered. But a careful review of the user's mailbox revealed a rule that put all e-mail from her boss into the trash and deleted it after 24 hours."

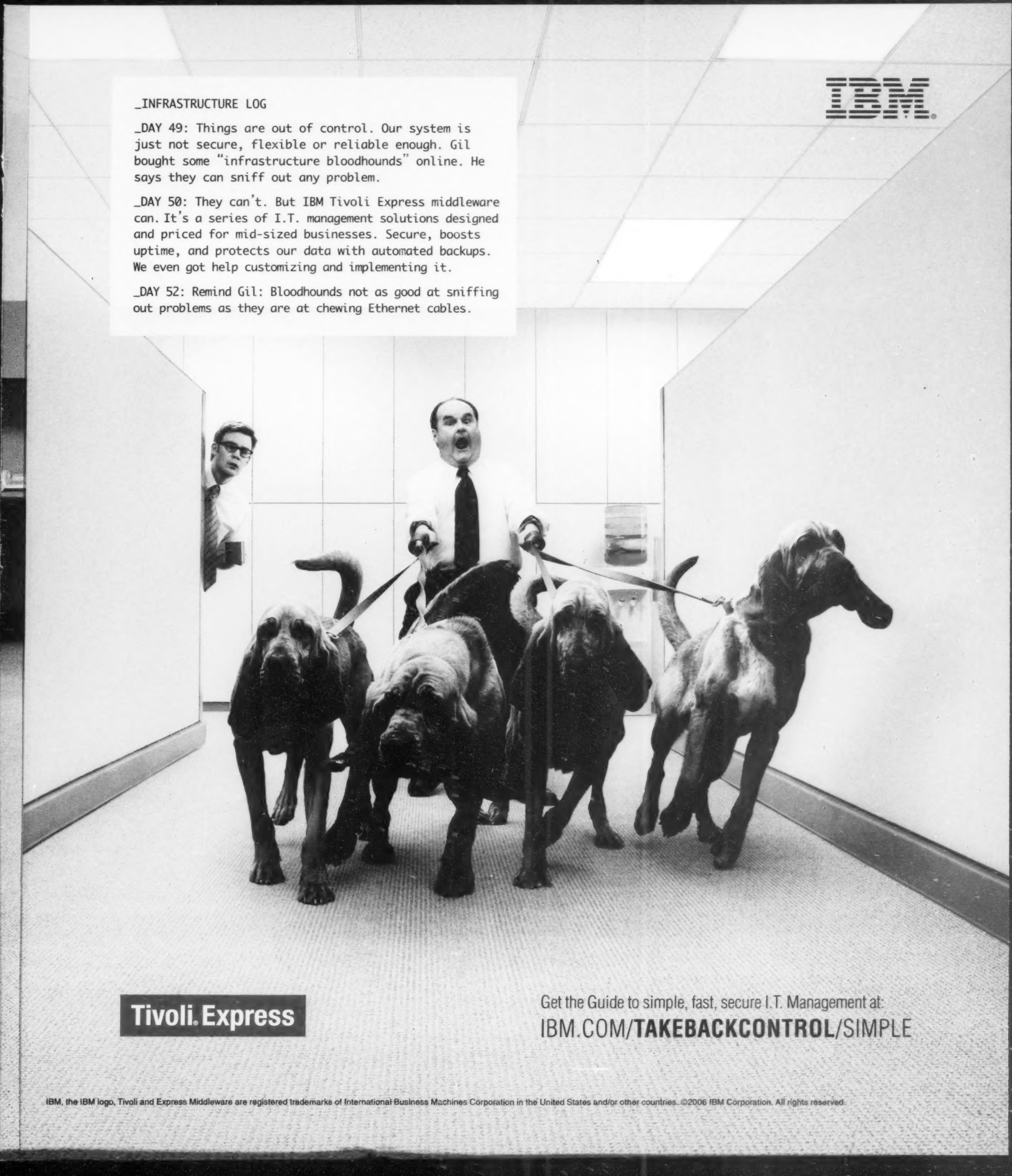
Just Like It Says

Help desk pilot fish fields a call: "Is the time and attendance system down?" Fish: Did you get a screen saying that the application was temporarily unavailable? "Yes." Fish: Then the application will be unavailable until further notice. "Oh, OK."

Maybe a Hairpin

This retailer has a problem with pilfered equipment. "Almost every Monday, there's a report of a stolen laptop," sighs a pilot fish there. " 'But I locked it in my credenza' is the typical message. Obviously, the users don't know that there are just a handful of keys for typical cubicle furniture. To find one that has a treasure in it, all a thief needs is those few keys – and persistence."

SHARKY'S PERSISTENT about asking for true tales of IT life. Send yours to **sharky@computerworld.com**, and you'll get a stylish Shark shirt if I use it. And check out Sharky's blog, browse the Sharkives and sign up for Shark Tank home delivery at **computerworld.com/sharky.**



_INFRASTRUCTURE LOG

_DAY 49: Things are out of control. Our system is just not secure, flexible or reliable enough. Gil bought some "infrastructure bloodhounds" online. He says they can sniff out any problem.

_DAY 50: They can't. But IBM Tivoli Express middleware can. It's a series of I.T. management solutions designed and priced for mid-sized businesses. Secure, boosts uptime, and protects our data with automated backups. We even got help customizing and implementing it.

_DAY 52: Remind Gil: Bloodhounds not as good at sniffing out problems as they are at chewing Ethernet cables.

IBM

Tivoli. Express

Get the Guide to simple, fast, secure I.T. Management at:
IBM.COM/**TAKEBACKCONTROL**/SIMPLE

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_INFRASTRUCTURE LOG

_DAY 8: I give up. Our infrastructure is so inflexible. Our apps and processes don't work together. We can't respond quickly to change. It's out of control.

_Gil had an epiphany. Duct tape. A few dozen rolls later and he's integrated everything, and everyone, by hand.

_DAY 10: Duct tape can fix many things. Basketballs. Sofas. Doorknobs. But not widespread app and process inflexibility.

_DAY 13: I've found something better: IBM WebSphere middleware. It'll make our infrastructure more flexible by seamlessly integrating our apps. We can change processes in a snap and use what we already have—even apps from SAP and Oracle. And with IBM's industry-specific expertise, we're on our way to enabling a service oriented architecture.

_Hmmmm...WebSphere. More powerful than duct tape.

Download our IBM SOA Assessment Tool at:
IBM.COM/**TAKEBACKCONTROL**/SOA

_INFRASTRUCTURE LOG

_DAY 35: Whoa! Came in today and found a black hole. Information goes in but doesn't come out. This is bad.

_DAY 36: The black hole just sucked in three interns. HR is not pleased.

_DAY 38: I've taken back control with IBM Information Management middleware. It's built on open standards. Totally scalable. Seamlessly unites all our critical information, whatever its source. Now our info has real business value that can help spur growth.

_We got everything back from the black hole. Except the interns.

Information Management

See innovative IBM Info Management solutions in action:
IBM.COM/**TAKEBACKCONTROL**/INFOMGMT

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